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- The War Industries Board: Its Development, Organization, and Functions** *Curtice N. Hitchcock* 545
- The World's Coal Situation during the War. I** *William Notz* 567
- The Requisites of a National Food Policy** *Walton H. Hamilton* 612
- Commercial Banking and Capital Formation. II** *H. G. Moulton* 638
- Notes** 664
- Washington Notes:** 664
- Outcome of the Third Liberty Loan—Call for New Taxation—The "Inflation" Situation.**
- Book Reviews and Notices** 669
- WESTERGAARD's *The Danish West Indies under Company Rule (1671-1754)* (Frank W. Pitman), 669.—WATON's *The Fetishism of Liberty*, 672.

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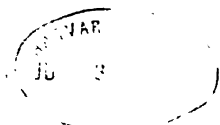
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THE WAR INDUSTRIES BOARD: ITS DEVELOPMENT, ORGANIZATION, AND FUNCTIONS

I. INTRODUCTION

When on March 4 of the present year the President appointed Bernard M. Baruch chairman of the War Industries Board and defined his duties, he did not, as certain press reports have implied, create an industrial dictator. His action did clear the way for Mr. Baruch's assumption of the duties of a director of industrial war strategy, of an industrial chief of staff—for the present position of the War Industries Board in the American government is comparable in its relation to national industrial policy to nothing so much as the functions of the general staff of the army in its jurisdiction over military strategy. After a year of war the direction of industrial policy is placed in single hands, and a central planning board is established for dealing not only with the problems of production and purchase but with the whole attitude of the government toward the mobilization of business resources for the prosecution of the war. Leadership has been focused and an administrative channel opened for the inauguration of a studied and inferentially constructive industrial policy.

The great advance which this step marks is the definite fixing of responsibility for the administration of such a policy. It is

yet somewhat early to judge whether the powers of the reconstructed organization will be commensurate with the responsibility. Although the President's letter to Mr. Baruch conferred seemingly far-sweeping powers, existing legislative barriers still make many of those powers dependent in greater or less measure on the co-operation and consent of the existing departments and bureaus of the government. Unwillingness and delay in granting such consents on the part of departmental agencies during the past year have hampered and even wrecked some of the organizations which the newly constituted War Industries Board has supplanted. The first six months of the war produced indeed a constant succession of experiences with the unwillingness of bureau officials to relinquish in any form the responsibility and powers, especially for placing contracts, which were theirs by congressional enactment. The interdepartmental committees, munitions boards, and like agencies which sought to draw together for common planning the scattered and apparently conflicting interests of the production and purchase bureaus which had to deal with industrial problems each encountered the same handicaps.

Varying in the ingenuity of their structure, these co-ordinating boards fell alike before the fundamental weakness that their common action and their power depended on the voluntary delegation of authority by bureaus inspired with a spirit of competition in efficiency which transcended their desire to work together for a common cause. This is said in no spirit of undue criticism of the men who composed them. It is undoubtedly too much to expect of human nature that an official charged with the detailed administration of a separately constituted government agency should be able to regard the problems of a brother-official as of equal urgency with his own. The British experience in the early days of the war with "groaning cabinets"—planning bodies intended to undertake executive action, but composed of officials each charged with administrative duties and thus with special interests—was not far unlike our own. An executive arbiter with the final voice on all decisions is alone able to prevent such bodies from becoming mere disorganized debating societies.

Yet there are at least three excellent reasons for predicting more effective results from the War Industries Board as now constituted.

The first is that the President, far more definitely and emphatically than before, has thrown the vast prestige of his office behind the agency and has delegated to Mr. Baruch in no uncertain terms many functions of an extra-legal but widely extended character which the presidency has gradually assumed during the past fifteen years and especially since the beginning of the war. This in itself is a guaranty that the influence of the War Industries Board will be determined by no narrow legalistic interpretation of its powers.

The second is that, with the exception of its functions in the determination of prices, the final decision as to the action of the Board is vested by the President in the chairman exclusively instead of as hitherto in the Board as a whole. This gives hopeful promise of quick and decisive action and opens the way to a courageous and effective assumption of leadership by the man to whom he has delegated the functions which his letter defines. While it may yet be too soon to reach a conclusion, the methods adopted by the new chairman and his choice of assistants so far show no reason for questioning the confidence which the President has placed in him, and with that whole-hearted confidence behind him, as the American war government is now constituted, there seems little reason to doubt his ability to carry through any policy which he may decide to inaugurate.

Finally, the passage by Congress of the so-called "Overman" bill, of which there now seems little doubt (this article is written early in May), giving the President power to redistribute the powers of the executive departments in any way which he may wish, will undoubtedly make available to the President the power to remove any existing legislative obstacles to the assumption of full control over governmental industrial policy by the War Industries Board and its investment with any or all necessary prerogatives now held by the several existing production and contracting bureaus and departments.

II. ORIGIN AND EARLY HISTORY OF WAR INDUSTRIES BOARD

Before attempting to analyze in detail the wide scope of the Board's activities and its probable significance in the history of American participation in the war and perhaps of the period of

reconstruction, it will be valuable to review its origin and early history. As at present constituted it is only one and perhaps not yet the final phase of a gradual, if at times stormy, evolution in war organization at Washington. It is very distinctly a product of actual experience rather than a previously planned and more or less theoretical experiment based on foreign experience in centralizing control. In many ways it aims at a more thoroughgoing centralization of direction of production than the European systems which have been used as the chief basis of comparison by critics who have attacked the lack of cohesion in production policy at Washington during the past year.

To trace the history of the War Industries Board it is necessary to go back to the beginnings of the Council of National Defense and its Advisory Commission, under whose legal authority the Board was first organized and of which it is still technically a part. The Council of National Defense and Advisory Commission, it will be recalled, were created in a section of the Army Appropriation Act approved August 29, 1916. The Advisory Commission, in the words of the act, 'was to consist of "seven persons, each of whom shall have special knowledge of some industry, public utility, or the development of some natural resource, or be otherwise specially qualified, in the opinion of the Council, for the performance of its duties."' In general, the Council was to study the industrial and transportation systems of the country and make recommendations as to the methods by which they might best be utilized in case of some possible future war; and the special knowledge of the Advisory Commission was to be employed in promoting this effort. The Council was authorized to create subordinate bodies and committees for special features of the work. There was in the act nothing suggesting the assumption of executive action by the Council or any of its supplementary bodies even in the event of a war; its whole object as stated and implied in the act was a peace-time survey.

The members of the Advisory Commission were appointed in October of that year. Yet it was not until March 3, 1917, that the Council was fully organized, although the Advisory Commission had met two or three times before that and had outlined certain

tentative plans for action looking toward a mobilization of industrial resources. Early in March, 1917, however, war seemed well-nigh certain, and the whole Commission, all of them men of large interests, came to Washington prepared to buckle down to work. By this time any idea of carrying out the letter of the enabling act by conducting a long-drawn-out survey of American industry had gone. The time was too short. Immediate action was vital, and while the Commission was not designed as an executive body, the law creating it was elastic enough to permit a great deal of successful effort toward bringing industrial organization in touch with the government through the several departments represented in the Council of National Defense.

The Commission divided itself into seven committees, representing respectively transportation and communication, with Daniel Willard as chairman; munitions and manufacturing (including standardization), with Howard Coffin as chairman; supplies (including clothing), with Julius Rosenwald as chairman; raw materials, minerals, and metals, with Bernard M. Baruch as chairman; engineering and education, with Dr. Hollis Godfrey as chairman; labor, with Samuel Gompers as chairman; and medicine and surgery (including general sanitation), with Dr. Franklin Martin as chairman. Under this arrangement the Commission constituted itself an informal advisory industrial cabinet—in a sense the first agency in the government to devote itself to the war industrial problem as an entity—with each member serving as a point of contact between the particular form of activity with which he was charged and the several government departments. The Commission met frequently, making numerous recommendations to the Council as to steps which should be taken to secure the best results from industry to the various bureaus and departments of the government, particularly those of the Army and Navy, then engaged in a hectic turmoil of war activity. Men of experience in the business and professional world were called to Washington by the chairmen of the seven committees to give their voluntary assistance in supplementing the work of the Commission, and even within the first month of its existence the Council's organization had been of invaluable assistance in drawing together at

Washington various lines of industrial activity in the interest of the national cause.

Yet as the war continued, increasing experience began to show weaknesses in the design of the Council's structure as applied to the new and unexpected task which confronted it. Admirably as it filled in many existing gaps in the peace-time structure of the executive departments of the government, the need gradually became apparent for more tightly constructed machinery. The situation was in no sense the fault of the men composing the Council and Commission, or of the designers of the organization, who had made their plans before the war was imminent. The country probably does not yet realize the debt of gratitude it owes the able volunteers whom the Council pressed into service for their versatile and energetic assumption of responsibilities of a totally unforeseen and unprecedented character.

Such failings as developed were the natural result of a courageous attempt to adopt a governmental agency designed for investigation and research to an executive purpose, and they should in no way detract from the very real and very concrete achievements for which the Council and Commission have been responsible. The statutory handicaps under which the organization has labored serve only to pay the greater tribute to its services. It is probable, indeed, that a period of experimentation and trial, with its inevitable proportion of partial successes and failures, was necessary in the early months of the war before the beginnings of a permanent solution could be worked out. In many other directions besides that taken by the offshoots which crystallized in the War Industries Board, the Council of National Defense and the Advisory Commission have served as a governmental laboratory for the inception of new ideas and their development into valuable elements of the federal war organization.

In the supply problem the bureaus and departments of the Army and Navy, organized on the old hard-and-fast lines established through generations of peace-time bureaucratic habit, naturally tended each to attempt to meet its own needs in its own way with little or no concerting of effort even when several needed large amounts of the same form of supplies. These purchasing

bureaus early began commissioning civilians to meet the great need for increased personnel, but this seldom affected the systems under which they were managed. Certain of these bureaus, directed by capable officials, handled their own individual problems unusually well. The fundamental weakness in the whole situation was not so much the individual incapacity displayed in a few instances by bureau officials as the lack of cohesion in the whole governmental system which prevented the adoption by all bureaus of a single policy toward industry.

While powerless to correct adequately this main deficiency, if indeed it was clearly seen anywhere in Washington in these early days, the Advisory Commission, acting partly under the specific powers of the Council and partly under the delegated authority of individual cabinet members, addressed itself to bolstering up certain of the more obvious breaches in the governmental machinery. This article need concern itself with the history of only two of the main committees of the Advisory Commission, those on supplies and on raw materials, as they alone have a direct bearing on the development of the War Industries Board. The third of the purely industrial committees of the Commission, that on munitions and standardization, had no more than a fleeting existence as a separate agency, as its potential functions were largely absorbed by supplementary agencies of the Council, and Mr. Coffin, its chairman, soon gave practically his entire attention to the specialized work of the Aircraft Production Board, of which he was made chairman.

While the whole Commission continued to give joint attention to questions of industrial policy at its frequent meetings, the two committees just mentioned, those on raw materials and supplies, with Mr. Baruch and Mr. Rosenwald respectively as chairmen, soon assumed also a large place in the actual administration of the affairs of the contracting departments. Almost their first step had been to call to Washington as volunteer committee members men whose experience in business had qualified them for expert assistance to the Quartermaster and Ordnance departments of the Army and the corresponding bureaus of the Navy in the problems of outfitting the nation's forces.

While inevitably these civilian volunteers had to contend with a certain amount of professional jealousy of interference from the military officials in charge of the bureaus, on the whole their efforts were welcomed in the face of the tremendous task before the government, and with the use of abundant personal tact they were able to contribute a great service to the national cause. Their greatest contribution was undoubtedly one of method. From the beginning they inaugurated the plan of dealing largely direct with the producer through personal conferences at Washington. Group after group of manufacturers and producers was called to the capital by the committees of the Council of National Defense, to be told in a heart-to-heart talk of the government's great need for their best effort, and as a result informal price agreements were negotiated which often bettered by several points the market price of the days before the war. It is impossible to say how much additional advance was prevented in the already fast-rising cost of living by the intervention of these trade agreements in place of the wholesale open-market bidding method traditionally pursued by the government bureaus. It unquestionably saved the government much money, but what is even more vital, it tended to reduce to the minimum the great price stimulation which would have followed throwing on an expectant short market the vast early demands of the government for army supplies.

In many instances this "pegging" of prices extended all the way down from the finished product to the raw material. In the case of shoes, for example, when such bids for shoe contracts as were made in the old way were finally opened, the price for tanned leather, hides, thread, and almost every other component of the finished product had been arranged for in advance by the government at a reasonable rate, so that the shoe manufacturers could bid with the assurance that no speculator had the opportunity to corner the accessory market against them and hold them up for an exorbitant price. The Secretary of War early suspended the statute making open-market bidding necessary, and while the Navy adhered to the open-bidding plan, which was more workable in its case because of the smaller amounts of supplies needed, the Navy Bureau of Supplies and Accounts was able frequently to take

advantage of the pegged prices on raw materials already arranged by the Committee on Supplies.

While certain specific duties were delegated to the Committee on Supplies by the Secretary of War, a great deal of its most effective work, as in the case of other agencies of the Council, was extra-legal in character—agreements negotiated or steps taken which might not in the last analysis have been binding in law, not because they violated the law, but because they were not covered by any existing legislation. They were simply born of the emergency and followed because good foresight and the national interest dictated the course. Some of these activities have since been severely criticized in Congress, and while mistakes were undoubtedly made, they were due rather to inadequate organization and divided responsibility than to bad judgment. It is difficult to believe that the historian's perspective will not in general approve the work of the Council organization in these early days.

Perhaps even more striking than the illustrations already given was Mr. Baruch's arrangement with the copper producers by which the government secured 45,000,000 pounds of the metal at less than one-half the current market price. Such negotiations as these, aside from their intrinsic value, were of service in two ways: first, they emphasized to the administration the superior effectiveness in bargaining of an agency representing the whole government empowered to act for all the bureaus, and dealing with industry as a whole; and secondly, they brought home to the representatives of business somewhat more clearly a real insight into their opportunity for service in the war. One of the most significant elements in the whole situation in the very earliest days of the Council is the way in which the spirit of the Sherman Law was shattered time after time in the interest of efficiency. Almost the first request made of each group of industrial representatives who came to Washington was that they organize a trade committee, representative as far as possible of the whole industry, to act as its spokesman with the government. In some instances the existence of these controlling committees has led to charges of favoritism to some large corporation or group of firms, but it is difficult to see how else any sort of system could have been

introduced into the general mobilization of industry gradually taking place.

All through this early period it will be seen that the essential features of the contribution of the Council's organization to the government service were initiative, foresight, and collective planning—qualities in which the overburdened bureaus were undoubtedly often sadly lacking. It was these qualities, brought into play through the able men in the extensive committee system which had grown up, which formed the chief inheritance from the old committee system of the Council to the existing organization of the War Industries Board. Without the foresight of the Committee on Raw Materials in determining long in advance the probable needs of the Ordnance Department for certain rare chemicals used in high explosives, in which a shortage existed, and the Committee's energetic action through various expedients in making supplies of them available long before they were actually needed, it is impossible to tell what might have become of the government's program for high explosives. It is the same quality of planning, on a wider scale, that the present War Industries Board is expected to provide.

Notwithstanding the service which these committees were thus able to render, centralized as it was through the director, the executive officer of the Council, they could touch the problem only at scattered points. With their indefinite and technically almost non-existent powers they could act virtually only where they were asked to do so by the department officials. Through sufficient urging they could exert some influence on prices and on policy generally, but only in specific instances, and in any given instance the final decision rested with the official constituted for the task by statutory authority. The Council committees' functions from beginning to end were purely supplementary, and while the personality of the members make "advisory" a misleading word, the disadvantages of divided power and somewhat more divided responsibility showed themselves immediately.

III. THE GENERAL MUNITIONS BOARD

The earliest manifestation of weakness in the iron-clad separation of bureaucratic functions displayed itself through a general

tendency on the part of the purchasing bureaus to bid against each other for all kinds of supplies and materials, with the result that those which had the most forceful personnel got the most effective results without regard to the relative importance of the work each had in hand. It was probably this tendency as well as the need for planning for the production of many forms of munitions entirely new to the War Department that inspired the creation of the General Munitions Board, the first of the attempts at a co-ordinating agency to draw the various departments and bureaus together for common planning. The somewhat earlier Munitions Standards Board, constituted for the purpose of standardizing specifications and tools for munition manufacturing, was soon absorbed by the larger body.

The General Munitions Board was composed of seven representatives of the Army, nine of the Navy, the chairmen of the Advisory Commission Committees on Supplies, on Raw Materials, on Manufacture, and on Medicine, and the chairman of the National Research Council, with Frank A. Scott, a Cleveland manufacturer, as chairman. In the words of the annual report of the Council of National Defense, "The efforts of the General Munitions Board were directed toward co-ordinating the making of purchases by the Army and Navy, and assisting in the acquisition of raw materials, and establishing precedence of orders between the Departments of War and the Navy, and between the military and industrial needs of the country." Its activities included developing sources of supply for almost every form of munition from rifles, ordnance, and shells to optical glass and gauges. It set up sub-committees which contributed invaluable aid to the construction of cantonments and the provision of storage facilities. It gave particular attention to collective consideration of price questions.

Yet inevitably from its size, its indefinite powers, and its loose organization its functions were more judicial than executive. The power of decision rested in the whole board rather than in the chairman, which necessarily detracted from the driving force of the organization. As in the case of the Committees on Supplies and on Raw Materials, with which it "co-operated," it had to deal chiefly with matters referred to it by the departments. The initiative as well as the final decision still rested with them. Under

an order of the Secretary of War, dated April 12 (the same as that in which the requirement for the public letting of bids was suspended), War Department Bureaus were told to consult the Munitions Board "where time permitted," in order that their orders might be "co-ordinated" with those of the Navy, but bureau heads were reminded in the next paragraph that their responsibility was in no way detracted from by this requirement. Under this arrangement a bureau head was at all times perfectly free to disregard at will any decision of the Board. The Committees on Supplies and on Raw Materials, to which the Munitions Board frequently referred special problems, remained virtually independent and co-ordinate agencies in the Council, some of their special subcommittees acting in a similar advisory capacity to the Board.

In practice this scheme proved unwieldy, slow, and inadequate despite the energetic efforts of the chairman of the Board, whose infinite tact and diplomacy brought about far better team work among the bureaus than might have been expected from most men in similar circumstances. The General Munitions Board began work on April 9. It lasted until July 28, when it was superseded by the War Industries Board, Mr. Scott remaining as chairman.

Despite its manifest weaknesses it had marked a distinct advance over a system with no connecting body at all. It served in a limited measure as a clearing house for orders, preventing the more flagrant cases of competition between departments and setting up the rudiments of a scheme of priority in orders. It gave an opportunity for common counsel on immediate questions of price. Finally, and perhaps most important, it helped to bring about a much-needed revision of specifications for many forms of munitions to permit quantity production in cases where the bureau requirements had aimed at so high a standard of perfection as to be beyond all reach of immediate commercial production. Yet inevitably because of its size and its constitution it was a negative rather than a positive agency. Its only power to enforce decisions lay in the personal force of its membership and the moral support of the Council of National Defense. It could prevent some mistakes, but it could hardly initiate policies.

IV. THE WAR INDUSTRIES BOARD: FIRST PERIOD

The War Industries Board which succeeded the General Munitions Board avoided some of the more obvious weaknesses in the old organization. It was made up of seven instead of twenty-odd members, all civilians with the exception of one representative each of the Army and Navy. The Committees on Supplies and on Raw Materials, with their numerous subcommittees of business men, were transferred from their position as independent committees of the Council and made "sections" of the new Board. Mr. Baruch was made a member of the Board, while Mr. Robert S. Brookings was appointed member of the Board in charge of finished products, Mr. Rosenwald remaining head of the section on supplies. Judge R. S. Lovett became a member of the Board in charge of priorities, while Mr. Hugh Frayne came in as a representative of labor. The Army and Navy representatives were Admiral F. F. Fletcher and Colonel (later Brigadier-General) Palmer E. Pierce. Messrs. Baruch, Brookings, and Lovett formed a committee for handling the purchases of the Allies, thus tending to avoid conflict in interest between them and the United States.

Many loose ends were thus drawn together, and the new Board was much more nearly an active planning board for industry than anything which had preceded it. Yet regarded as an industrial cabinet it still occupied a very anomalous position. Its hazy authority could be checked in many directions. As a subordinate body of the Council of National Defense it very definitely lacked power to take the initiative in industrial policy. It was still a clearing house rather than a directorate. Again, looked at from the point of view of effective administration, such authority as it possessed, whether delegated by members of the cabinet or assumed through the prestige of its position, was vested in the Board as a whole rather than the chairman, just as in the case of the General Munitions Board, with a resultant loss in driving force. Finally, as in the case of the latter Board, its decisions could be nullified, not only by the heads of the executive departments of the government, but also by chiefs and even subordinate officials of the purchasing bureaus, in whom statutory responsibility and power over contracts still rested. The bureau chiefs were subject constantly

to a dual responsibility—their legal responsibility to the heads of their departments, and at the same time their hazy dependence for guidance on the War Industries Board.

The board was still a “co-ordinating” body which depended for its effectiveness on the co-operation and consent of individual bureaus, and their unwillingness in many instances to accept its leadership was frequently a source of embarrassment both to the government and to industry. Aside from questions of policy the Board’s lack of a definite status frequently produced unnecessary confusion in the mechanics of the dealings between manufacturers and the government. In a sense charged with supervision over production, the Board often found itself compelled to refer producers to individual bureau heads for information and direction even in questions involving several of them alike. While many of the threads of industrial activity converged in the Board, others remained unfocused. It is a distinct tribute to the quality of the men engaged in the Board’s work that so much was accomplished toward bringing order out of chaos and developing the vestiges of a centralized policy through informal conferences between the Board and representatives of the bureaus, and between these two interests and the leaders of industrial enterprises.

Through the period from the creation of the War Industries Board to the date of the President’s letter to Mr. Baruch in March probably no two problems better demonstrated the need for a more authoritative deciding voice than those of price and priority. Under the existing governmental system, short of the President, there was no one whose word was final on either question, and a certain amount of responsibility for both was distributed in an indefinite way among the individual heads of departments, their bureau chiefs, the War Industries Board, and its sections. The War Industries Board early set up an organization under Judge Lovett to decide questions of priority in production among the purchasing departments, and the Priorities Division of the Board was able to do much effective work toward eliminating conflict in war orders between the several departments and the Allies. This division grew in usefulness under Judge Lovett and still further increased its effectiveness under his successor, Judge

Edwin B. Parker, when Judge Lovett resigned to join the new Railroad Administration. Yet, especially in the earlier months of its existence, it was much hampered by special priority orders issued by individual production departments, particularly the Quartermaster Department, which in its eagerness to expedite shipment inaugurated its own special system and caused a great deal of confusion before the plan was finally abolished.

Yet the difficulties of establishing an effective system for administering priorities in production were largely of a mechanical nature. The much larger problem of determining priority in delivery as between military and non-military needs, between food and fuel and guns, between steel for merchant ships and steel for destroyers, and between guns for the Navy and guns for the Army, involving the whole question of large war strategy, was not vested in the Board, nor indeed vested anywhere definitely short of the President, and while Judge Lovett during his tenure of office with the Board was charged by the President with administering priority in transportation, the lack of an informed agency with comprehensive control over the whole problem was frequently apparent.

In the words of the statement issued by the Council of National Defense creating the War Industries Board, the Board was to "consider price factors." The actual form which its "consideration" took through the period from July 30 to March 4 was a series of agreements with the national representatives of various branches of industry on the price to be paid for their products. The price was to be charged alike to the American government, the public, and the Allies. While negotiated through collective bargaining, naturally these agreements had all the force of a price-fixing law, and they illustrate perhaps better than any other of the activities of the Board its tendency to become a central, executive, industrial planning board. It should be noted as further illustrating its trend that in each case the President's definite approval was secured before the price was adopted, making the Board here the direct agent of the President rather than of the Council, securing in this way the agreement of the several purchasing departments to the price determined upon, and giving the

V. THE WAR INDUSTRIES BOARD: REORGANIZED

It was such considerations as the foregoing which led the President on March 4 to make the War Industries Board into an agency of this character, with the power of decision resting definitely in the hands of the chairman on all questions except that of price. In the words of the President's letter, the functions of the board are:

1. The creation of new facilities and the disclosing, if necessary the opening up, of new or additional sources of supply.
2. The conversion of existing facilities, where necessary, to new uses.
3. The studious conservation of resources and facilities by scientific commercial and industrial economies.
4. Advice to the several purchasing agencies of the government with regard to the prices to be paid.
5. The determination, wherever necessary, of priorities of production and of delivery and of the proportions of any given article to be made immediately accessible to the several purchasing agencies when the supply of that article is insufficient, either temporarily or permanently.
6. The making of purchases for the Allies.

The duties of the chairman are:

1. To act for the joint and several benefit of all the supply departments of the government.
2. To let alone what is being successfully done and interfere as little as possible with the present normal processes of purchase and delivery in the several departments.
3. To guide and assist wherever the need for guidance or assistance may be revealed: for example, in the allocation of contracts, in obtaining access to materials in any way pre-empted, or in the disclosure of sources of supply.
4. To determine what is to be done when there is any competitive or other conflict of interest between departments in the matter of supplies: for example, when there is not a sufficient immediate supply for all and there must be a decision as to priority of need or delivery, or when there is competition for the same source of manufacture or supply, or when contracts have not been placed in such a way as to get advantage of the full productive capacity of the country.
5. To see that contracts and deliveries are followed up where such assistance as is indicated under 3 and 4 above has proved to be necessary.
6. To anticipate the prospective needs of the several supply departments of the government and their feasible adjustment to the industry of the country as far in advance as possible, in order that as definite an outlook and opportunity for planning as possible may be afforded the business men of the country.

In brief, he should act as the general eye of all supply departments in the field of industry.

In this letter the President practically delegates to the chairman of the War Industries Board his own authority so far as it extends to the supervision of the industrial needs of the departments and places him definitely at the head of them as a planning leader. For all practical purposes it removes the Board from the supervision of the Council of National Defense and makes it an agency responsible directly to the President, more or less co-ordinate in authority with the executive departments. Until the passage of the Overman bill, which will probably have occurred by the time this article appears in print, it will be impossible to give the chairman of the Board more legal authority over the production bureaus. Their responsibility will technically still be entirely to the executive heads of their departments. Yet even when the bill becomes law it is doubtful if the President will consider it wise or expedient to transfer more than a part of the legal responsibility of the bureaus to the War Industries Board. A large disruption of the existing machinery, built up on hard experience, should be wholly unnecessary. So long as the general directing control and the determination of industrial policy are centralized, detailed administration may well be left decentralized, especially with such vast machinery as has grown up in Washington.

In the actual machinery of the War Industries Board itself there have been and probably will have to be few changes. The Board as it now exists has under it special divisions and sections for handling particular supply problems, each in charge of experts. The Raw Materials Division has specialists for such materials as steel and its products, non-ferrous metals, chemicals and explosives, lumber, building materials, and the like, each with its complement of by-products. The Division on Finished Products and the Conversion of Industry includes such materials as cotton duck, machine tools, electrical equipment, optical glass, and a host of other things. Frequently of course the Board relies on the technical staff of one of the regular supply departments of the government for handling particular commodities.

Acting as the directing agency in the mechanism of the Board's organization is a "Requirements Division" composed of the heads of various sections of the War Industries Board, including the Priorities Division, and representatives of the Army, the Navy, the Emergency Fleet Corporation, the Food Administration, the Red Cross, the Railroad Administration, the Fuel Administration, and the Allied Purchasing Commission—practically all the government agencies which come in touch with the industrial field. To this agency the supply departments of the government furnish continually estimates of their future needs, keeping the division constantly in touch with the progress of their business, so that their requirements can be planned for far ahead. In turn the Requirements Division delegates to the proper division of the Board or to one of the supply departments itself, as the case may be, the task of meeting the need. Of this division the chairman of the War Industries Board is an *ex officio* member and is thus constantly in touch with the daily progress of business, although not compelled to devote himself to the detailed administration of it.

Priority of production is administered as before by the Priorities Division, of which Judge Parker is chairman, but a new agency has been set up by the Board for the administration of priority of delivery, of which Mr. Baruch is again an *ex officio* member, and which includes representatives of all the executive departments and special administrations, such as food and fuel, which touch industrial questions, joined together for common planning. It will be noticed that this agency hardly yet meets the requirements for a general war priority board to determine the largest questions of national strategy and to join military with industrial strategy. These decisions apparently rest now chiefly with the General Staff of the Army if not directly with the President himself. Yet the new Priorities Board in the War Industries organization is a long step in the right direction.

Finally the determination of price is now vested in a special committee, of which Mr. Robert S. Brookings, of the War Industries Board, is chairman, and of which Mr. Baruch is again an *ex officio* member. It includes General Palmer E. Pierce, member of the War Industries Board and Surveyor-General of Supplies for the

War Department; Paymaster Hancock, of the Bureau of Supplies and Accounts of the Navy Department; Dr. H. A. Garfield, Fuel Administrator; F. W. Taussig, chairman of the Tariff Commission; W. J. Harris, chairman of the Federal Trade Commission; and Hugh Frayne, the labor member of the War Industries Board. The Price Committee thus includes not only officials having to do with the commodities particularly to be considered, but also the basic factors entering into a just price determination. This again is a decided step in advance toward fundamental planning.

VI. FURTHER CO-ORDINATION REQUIRED

From the present trend of events the War Industries Board promises to become the sole directing agency between the government and industry. Backed by the power of the President to commandeer, to withhold fuel, and in other ways to force the halting into line, it can mold the country's industrial system almost as it will—whether in organizing the nation for war or in directing the lines along which it shall return to normal conditions when peace comes. In a system of government such as ours, where the responsibility for directing the war rests almost exclusively in the hands of the President, and where his power ultimately becomes almost absolute, the Board has been shaped into a very potent instrument.

Yet powerful as it may become, subject only to the jurisdiction of the President, it is well to remember that in a comprehensive national war plan it cannot stand alone. Its policies must be subject to the administration's general strategy in the war—for instance, to the amount of munitions in comparison with the number of men, or the amount of food that it wishes to send abroad at any given time. The munitions program and the conversion of industry to war purposes must be governed by the ultimate end in view. In addition, one of the great factors in production—the labor factor—is being administered by another government agency, and it is obvious that priority in the labor supply must go hand in hand with priority in materials.

Finally the War Industries Board is now virtually directing the government's price policy. Necessarily statesmanship demands

the most carefully studied relationship between prices and war finance. Great Britain, with her flexible parliamentary system, found her peace-time budget system easily adaptable to war and has been able to correlate her war taxation and her policy toward war profits. In the United States the responsibility for regulating prices—a “voluntary” but none the less effective system of regulation—has been assumed by the President, acting through the War Industries Board, while the ultimate responsibility for taxation rests exclusively with Congress, a constitutionally co-ordinate branch of the government.

The War Industries Board itself is a notable demonstration of the power of war to force concert of effort and collective planning, with centralized responsibility. As yet the President himself is the single determining force in the larger questions of broad war strategy, involving military and civilian problems alike, despite frequent conferences among officials dealing with interrelating problems, and between those officials and the President. Will the President's colossal task permit him to carry the war on his shoulders through another year without a further development of the small planning-board idea to assist him in the formulation of policy somewhat along the lines of the responsible ministries of Europe? Further, notwithstanding the apparent handicaps of constitutional barriers and political traditions, can the government carry through a long war without bringing together into a better working relationship those agencies which levy the funds and those which have the responsibility for their expenditure? It is through such advances in administrative methods, opening the way for constructive planning, that a national emergency such as the present can in some small degree help pay for itself.

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THE WORLD'S COAL SITUATION DURING THE WAR. I

I. GENERAL SURVEY OF THE PROBLEM

The coal industry is the one basic industry most closely connected with the present war. To both the Allies and the Central Powers their respective available coal resources constitute a *sine qua non* for carrying on the war, while in the period of reconstruction after the war coal will unquestionably become one of the most vital factors in determining industrial expansion and the growth of international trade.

Possibly no other single important industry has been affected so vitally in all its different stages by the war as the coal industry. It reflects in a plastic manner some of the most fundamental economic changes to which the war has given birth. The fact that in all the leading countries of the world more or less similar problems have developed during the past three and one-half years of the present world-war attaches an added interest to a comparative survey of the international coal situation at the present time.

Stimulation of coal production has been the factor of prime importance in the world's coal situation ever since the present great conflict of nations began. Everything else—prices, wages, transportation, legislation, etc.—has become primarily a means toward the all-important end of producing as much coal as possible. While complete production figures are not available for all coal-producing countries, Table I shows the production of coal in the leading coal-producing countries of the world during the five years from 1913 to 1917.

From the following table it will be seen that the coal production of most of the large coal-producing countries has decreased considerably since 1913. Great Britain, Germany, France, Russia, Austria, and Belgium show greatly reduced annual outputs. In the United States, Japan, China, Spain, and Holland the pre-war level was either maintained or increased. Canada shows a slight decrease. As will be explained more in detail later on, under each country separately, the main causes for the decline in coal production were lack of labor and inability to move coal from the mines

owing to car shortage. Strikes, inefficient labor, scarcity of machinery and pit timber were other contributing causes. The decrease in French, Belgian, and Russian coal production was caused by the German military invasion of large parts of the coal fields in those countries.

TABLE I

COAL PRODUCTION IN THE LEADING COAL-PRODUCING COUNTRIES OF THE WORLD

	1913	1914	1915	1916	1917
United States.....	570,048,125	513,525,477	531,619,487	585,372,568	621,409,629
Great Britain.....	287,698,617	265,664,393	253,206,081	256,348,351	248,473,119
Germany.....	278,627,497	245,482,135	235,082,000	.....	.....
Austria-Hungary...	59,647,957	.....	.....	30,896,388	28,558,719
France.....	40,843,618	29,786,505	19,908,000	21,477,000	28,960,000
Russia.....	35,500,674	.....	27,820,632	13,622,400	13,266,760
Belgium.....	22,847,000	.....	15,930,000	.....	.....
Japan.....	21,315,962	21,293,419	20,490,747	22,901,580	.....
India.....	18,163,856	.....	17,103,932	17,254,309	.....
China.....	15,432,200	.....	18,000,000	.....	.....
Canada.....	15,012,178	13,637,529	13,267,023	14,483,395	14,015,588
Spain.....	4,731,647	4,424,439	4,686,753	5,588,594	.....
Holland.....	2,064,608	.....	2,333,000	2,656,000	.....

In 1913 the total world-production of coal amounted to approximately 1,478,000,000 short tons.¹ Of this the United States, the largest coal-producing country of the world, alone produced about 38 per cent, Great Britain 22 per cent, and Germany 20 per cent. The fact that during the present war the production of coal in the United States has increased, while Great Britain's and Germany's production decreased, indicates that from 1914 to 1917 the lead of the United States as the greatest coal-producing country of the world has greatly increased.

TRANSPORTATION

Transportation has become, next to production, the most important problem in connection with the international coal situation. In fact difficulties of rail and water transportation have multiplied so rapidly during the course of the war that the whole question of supplying the world's needs of coal at present depends largely upon adequate shipping facilities.

The paramount importance of this phase of the transportation problem has been officially recognized in several special govern-

¹ "The Production of Coal in 1914," *U.S. Geol. Survey*, 1915, p. 63.

ment reports on this subject here and abroad. The Federal Trade Commission reported to Congress "that the coal industry is paralyzing the industries of the country, and that the coal industry itself is paralyzed by the failure of transportation."¹ The coal situation in Canada was described in a report submitted to the Minister of Labour² as follows: "Transportation had most to do with the conditions in so far as Quebec and Ontario were concerned. The partial failure of the railroads to meet the situation was probably the main cause of the [coal] shortage, as with transportation available coal could have been had." In Great Britain the first difficulty which arose in connection with the coal situation after the outbreak of war was one of distribution, due to the congestion of railways.³ An official communication recently issued by the German government states that the inability to meet the demand for coal is solely due to lack of transportation facilities. Limitation of passenger traffic is suggested as a means of meeting the difficulty. Enormous stocks of coal at the mines, it is claimed, cannot be moved due to rolling stock shortage.⁴ In the Scandinavian countries, France, Italy, and South America, all of which depend at present for a large part of their coal supply on oversea shipments, the scarcity of coal-carrying vessels and exorbitant freight rates have become a matter of grave concern.

As one means of relieving railroad traffic congestion zoning schemes have been put in operation in Great Britain, the United States, and France. These countries were divided into areas or zones, the interchange of coal between producing areas was restricted, and consuming districts were allotted specific sources of supply. As a further means for economizing railway transport, inland canals have been utilized for coal shipments in this country and in Europe to a greater extent than ever before. For many years practical coal men have advocated the buying and storing of coal by household consumers during the summer months so as to avoid coal traffic congestion occasioned by rush orders during the

¹ *Report of the Federal Trade Commission on Anthracite and Bituminous Coal*, 1917, p. 16.

² *The Labour Gazette*, June, 1917, p. 481.

³ *The Board of Trade Journal*, January 24, 1918, p. 92.

⁴ *The Iron and Coal Trades Review*, February 8, 1918, p. 145.

fall and winter months. Special inducements in the form of summer discounts were given with this end in view. Nation-wide educational campaigns to bring about greater co-operation of the public in this matter have been organized in several countries, and prospects are that the results attained will have a permanent beneficial effect not only on coal transportation but also on the financial side of the coal trade in the future.

THE LABOR SITUATION

The labor situation in so far as it affects the world's coal situation offers several distinct features. Throughout the world a shortage of labor has developed in the coal fields. It has been a matter of vital importance to the governments of all the coal-producing countries to provide for an adequate, steady, and efficient labor supply as a means of keeping the production of coal at the maximum. At the beginning of the war the mistake was made in Great Britain, Germany, and Canada of drawing heavily upon the coal miners for service in the army. This mistake reflected itself almost immediately in a decided falling off in the coal production, and made it necessary to send thousands of the enlisted coal miners back to the coal fields. In the United States thousands of men in 1915 and 1916 left the coal fields for more lucrative employment in munition factories, etc., where the scale of wages ranged on an average about 20 per cent higher than wages in the coal fields.

To keep miners from seeking other employment and to remove labor unrest due to wage troubles, liberal allowances for wage increase were made in the regulations governing maximum coal prices. The French law¹ of April 23, 1916, provides that the average wages in mines shall not be in any case below those in effect in 1914 and 1915, and that all payment in kind to the miners or their families, affirmed by local custom, shall be observed. In England the so-called "war wage" containing liberal provisions was established on September 17, 1917. In the United States a special wage-increase allowance of 45 cents per ton was provided for by an order of the United States Fuel Administration of October 27, 1917, this being the second wage increase for coal miners in that year.

¹ *Journal officiel*, April 23, 1916, pp. 3443 ff.

Never before in the history of coal-mining have wages in the coal fields of the world been as high as they are at the present time.

Nevertheless there has been much unrest and numerous strikes have occurred among the coal miners of Great Britain, the United States, and Germany. The main causes for these labor troubles have been shutdowns at the mines on account of shortage of cars, thus decreasing the number of work days, and a heavy increase in mine fatalities, due partly to inexperienced labor and partly to less rigid enforcement of mine safety regulations in order to speed production.

COAL PRICES

The question of wartime coal prices offers many angles of interest. Everywhere prices have increased far above pre-war levels. Voluntary agreements on the part of producers and dealers to limit prices and profits have failed without exception. In all the leading coal-consuming countries of the world maximum prices had to be fixed sooner or later by government action. In every case the maximum mine prices are considerably above the average scale of prices obtaining in the years immediately prior to the war. In every country where maximum sales prices at the mines were fixed liberal allowances were made for wage increases to mine-workers. In Great Britain present maximum mine prices approximate 6s. 6d. above the average mine price which obtained during the year ending June 30, 1914. In the United States special mine prices have been fixed for each state, and in many cases also for certain coal fields within a state. Taking the prices for bituminous and anthracite coal in Pennsylvania as typical, the difference between the average f.o.b. mine price for that state in 1913 and the most recent maximum f.o.b. mine prices is as follows:

Average mine price in 1913 per ton: ¹	
Bituminous.....	\$1.11
Anthracite.....	2.13
Maximum price f.o.b. mines effective February 16, 1918, and March 23, 1918, for run-of-mine per ton:	
Bituminous { Central Pennsylvania.....	2.60
{ Southwest Pennsylvania.....	2.00
Maximum price f.o.b. mines effective August 23, 1917:	
Anthracite { White ash broken.....	4.55
{ Pea.....	4.00

¹ *The Coal Trade*, 1917, p. 158.

In Germany the total increase in mine prices of the Rhenish-Westphalian Coal Syndicate from the beginning of the war to January, 1917, approximated \$1.25 per ton.¹

It should be noted that the universal advances in mine prices of coal under the price-fixing laws of the various countries are due largely to wage increases, although the increased profits allowed the operators have also been liberal. It has been pointed out here and abroad that the increase in the labor item will tend to keep coal prices up after the war.² Labor leaders have repeatedly asserted that after the war the unions would under no circumstances countenance a return to pre-war wage scales.

While a certain degree of uniformity is noticeable in the rise in price levels for coal at the mines in the countries where maximum prices have been fixed, an entirely different picture presents itself if we compare the maximum retail coal prices obtaining under government regulations in different sections of the same country. In most countries the national coal controller has established a uniform maximum margin of profit for all retail coal dealers, while local authorities have fixed maximum retail coal prices for their communities. By reason of the fact that in establishing maximum retail consumers' prices allowances had to be made for increased handling expenses, freight rates, middlemen's profits, war taxes, etc., retail coal prices at the present time universally show a very heavy increase over pre-war prices.

In Great Britain the maximum net margin allowed retailers is 1 shilling per ton, in Canada 50 cents per ton, while in the United States an order of the United States Fuel Administrator, dated October 1, 1917, allows an increase of 30 per cent over the average gross margin of 1915.

In past years the bulk of the coal sold at the mines has been sold under contracts running for a year or more, and consequently contract prices have formed an important element in the coal-price situation during the present war. When the zoning scheme was established in Great Britain all coal contracts were terminated.

¹ *The Iron and Coal Trade Review*, January 5, 1917, p. 7.

² *Report to the American Manufacturers' Export Association by the American Industrial Commission to France*, pp. 149 ff.

An order of the United States Fuel Administrator of December 24, 1917, provides that no contract shall be made for a period longer than one year, that contract prices in the future shall not exceed the maximum prices in effect at the date of shipment of contract coal from the mine, and that all contracts shall be subject to cancellation upon order from the United States Fuel Administrator.

UNIFORM COST ACCOUNTING

While many of the recent economic changes affecting the coal industry are the result of temporary war conditions which will in due time give way to the normal conditions which prevailed prior to the war, some of them unquestionably have brought about permanent changes which will have to be reckoned with in the future. One of these, meriting special attention, is the effect of uniform cost-accounting regulations which have been established here and abroad under government control. In Great Britain, in Canada, and in the United States many thousands of operators, jobbers, and retailers are compiling at regular intervals cost reports on their business along uniform lines prescribed by their respective government authorities. The development of adequate cost systems has for some time been pointed out as a crying need for American business men.¹ According to a recent compilation,² 4,620, or 35 per cent, of all the business failures in 1917 in the United States were due to incompetence resulting from not knowing one's business thoroughly. This is largely a matter of inadequate cost accounting.

In order to procure sufficient data as a basis for fixing maximum prices and margins, the various governments mentioned above require standardized cost reports to be filed by coal producers and dealers, and this practically amounts to a systematic correspondence course in cost accounting covering the entire coal industry and trade. The full benefits of this training in business efficiency will be realized in the future and promises to be of incalculable value in the post-war period of readjustment, when domestic and foreign competition will be felt more keenly than at present.

¹ E. N. Hurley, *Awakening of Business*, 1916, p. 15.

² *Bradstreet's Journal*, February 2, 1918.

TENDENCY TOWARD COMBINATIONS AND STATE REGULATION

There has been considerable speculation as to whether the numerous governmental war measures of regulation and control of the coal industry would lead to nationalization of this industry in the near future. The exigencies of war conditions have brought into prominence as never before the vital importance of conservation of this natural resource. The waste and lack of efficiency in production and distribution under private ownership and under conditions of unrestrained competition were disclosed to the public eye when the old trade machinery broke down under the stress of a sudden dislocation, occasioned by the war, of the customary industrial and commercial organizations. And finally consumers have gradually realized that their interests, as well as those of the state, were not sufficiently safeguarded against the selfish aspirations of powerful and organized trade interests.

As far as public sentiment can be gauged by the press, by parliamentary debates, and by reports of special commissions which have investigated the problems involved, it is a noteworthy fact that the view is apparently rapidly gaining ground the world over that, if not complete nationalization, at least a much greater degree of state regulation of the coal industry and trade than existed before the war is desirable and in the public interest.

A tendency in this direction is already noticeable in legislation recently enacted or planned here and abroad. The French government is backing a bill limiting coal-mining concessions and providing for a participation of the state in the profits of the coal operators. The Austrian government recently introduced a bill for the nationalization of coal mines in that country. It is proposed to limit the period of grace for privately owned concessions to eight years for concessions notified before January 20, 1919, and to two years for those notified later. The scheme of a compulsory coal syndicate put forth by the German Federal Council in 1915 provided for government participation in the proposed coal syndicate. The Spanish law of July 12, 1917, creating a Coal Mining Council, is based on a similar policy. A law recently passed by the Congress of Bolivia provides for the conservation of that country's

coal resources.¹ The Swiss government has taken active measures to exploit coal deposits, a co-operative coal-mining society, with the government as member, having been formed in that country.²

Already several states own and operate coal mines, viz., Prussia, the Government of Victoria in Australia, and Bulgaria. The chief objections urged everywhere against nationalization of the coal-mining industry are the great extensiveness of the coal fields, which would make centralized control difficult, and the immense financial problems involved in taking over the coal mines. However the plan of compulsory syndication of the coal industry with government participation and under government control is being advocated in several countries and apparently is gaining ground as a compromise solution between wartime state control and pre-war private ownership.

In this connection mention should be made of the tendency among operators, jobbers, and wholesale and retail dealers everywhere to form voluntary trade associations and combines. In England such a movement on a large scale was initiated by Lord Rhondda just prior to the war, including not only the colliery owners but also the world-wide coal export trade of Great Britain. In Germany and France coal syndicates and cartels have existed for many years; in fact in the former country a strong effort was made in 1915 to disrupt the leading coal syndicate, which was averted, however, by government intervention. The combination movement has made itself felt most strongly during the war in the United States. In 1917 the National Coal Operators' Association, the National Jobbers' Association, and the National Retail Coal Dealers' Association were organized. In addition to these national associations, numerous state and local associations have organizations of their own, including about fifty operators' associations in various coal fields throughout the country. In Canada a similar movement is noticeable, as also in Sweden. Shipping pools like the Tidewater Coal Exchange, the Lake Erie Coal Exchange, and its successor, the Coal and Ore Exchange, indicate a similar

¹ *Commerce Reports*, March 1, 1917, p. 805.

² *Ibid.*, April 24, 1917, p. 305.

tendency toward syndication among American coal-shipping interests. On the other hand a parallel movement of combining is noticeable among the miners—the number, size, solidarity, and influence of the miners' unions in all the coal-producing countries having greatly increased during the war.

This universal movement of the coal producers and dealers on the one side and of coal miners on the other, to combine for the protection of their common interests, represents one of the significant developments in the world's coal situation, and the chances are that in the near future it will speed the various governments to enact remedial legislation in the public interest. As far as tax legislation is concerned, heavy excess-profits taxes, coal taxes, and coal-royalty taxes have been imposed on the coal industry in a number of countries during the present war. Under the British Coal Mines Control Act of 1918, colliery owners must pay an excess-profits tax amounting to 95 per cent. In France coal operators have to pay an excess-profits tax of 50 per cent, and an additional heavy tax has been placed on coal-land royalties as well as on imported coal. In Germany a coal-tax law provides for a tax of 20 per cent of the mine price per ton. The Austrian parliament recently enacted a similar coal-tax law.

EXPORT TRADE AND BUNKER SITUATION

An analysis of the international coal export situation from 1913 to 1918 reveals some very interesting facts. One of the most significant is the great decline in the coal exports of Great Britain, whose position as a commercial nation rests very largely on her coal export trade. The increased demand for domestic consumption and the decreased available shipping tonnage have brought the total of Great Britain's coal exports from 97,719,996 tons in 1913 down to 51,341,487 tons in 1917. This amounts to a decline in the coal exports for the two years of more than 46,000,000 tons. In comparison with these figures it is interesting to note that the total exports of anthracite and bituminous coal from the United States have increased during the same period from 23,022,746 tons in 1913 to 27,616,500 tons in 1917.

During the war, ocean freight rates on export coal have reached unprecedented figures. As compared with 1914, the last normal year prior to the war, ocean freights from Atlantic ports to European and South American ports have increased as much as 400 per cent. The data in Table II illustrate the increase in freight rates on coal shipped from the United States to Italy and to Montevideo from October, 1915, to the end of 1916.

TABLE II

	From United States	To Italy	To Montevideo
October 23, 1915.....		\$14.40	\$ 8.88
January 1, 1916.....		22.80	12.60
May 27, 1916.....		33.60	20.40
November 13, 1916.....		24.00	13.20
December 26, 1916.....		39.60	19.20
April, 1918.....			18.00

Scarcity of tonnage, high insurance rates on account of submarine depredations, and high wages for seamen were the chief causes for these high freight rates, although individual tramp steamers sailing under neutral flags apparently seized upon the opportunities for profiteering.

Closely connected with the question of coal exports is that of coaling stations for bunkering purposes. The nation which controls the coaling stations along the international sea routes will have a great advantage over its competitors in international trade. In the past Great Britain was the foremost maritime nation in possession of strategic artificial coaling stations, and thus gained control of the bulk of the world's supply of bunker coal. Gibraltar, Malta, Port Said, Singapore, Hongkong, and Shanghai are some of the British coaling stations which encircle the globe. The war has effected great changes. While Germany has lost the few coaling stations she possessed at Tsing-Tau, in Africa, and in the Samoan Islands, American, Japanese, and Dutch coals have won new markets. England's exports of bunker coal have declined from 21,031,550 tons in 1913 to 12,988,172 tons in 1916. In the Far East Japanese coal has in many places supplanted English coal, and on the entire Northern Pacific coast of Asia Japanese coal is now predominant. Nagasaki and Yokohama are the chief Japanese coaling ports, and

are used by practically all coal-burning steamers crossing the North Pacific. In the East Indies the Dutch have recently built up a successful bunker trade. Dutch coaling stations, supplying Sumatra and Borneo coal, have been established at Batavia, Soerabaia, and notably at Sabang, a strategic location at the entrance to the Straits of Malacca and on the direct trade route from Europe to the Far East.

The war has brought about a marked increase in the American bunker coal trade of the Atlantic. The excellent coaling facilities at Panama and Colon give the United States complete control of one of the most important replenishing depots of the world's trade. American bunker coal has also supplanted British coal to a very large extent at the leading South American stations.

The following table shows the gradual increase in the tonnage of American bunker coal loaded on board vessels in the foreign trade at the principal Atlantic ports from 1912 to 1917:

1912.....	5,873,018 tons
1914.....	6,080,722 tons
1915.....	6,907,525 tons
1916.....	7,216,656 tons
1917.....	7,454,332 tons

It is evident that England's former supremacy in coaling stations and bunker coal supplies has been weakened during the war by the spread of American, Dutch, and Japanese coal.¹ It is of course problematical to what extent Great Britain may regain her former oversea coal markets after the war. The good quality of her coal may decide. On the other hand greatly increased production, a large fleet of newly built coal-carrying vessels, and intelligent co-operation of American exporters under the new Webb law,² allowing combinations in foreign trade, promise to make the United States the leading coal-exporting country of the world. The financial weakness of foreign countries will be a further potent influence in favor of American exports in the future, and finally a significant fact which must be taken into account is that our facilities for loading coal exceed those of any other country.

¹ *The Americas*, February, 1918, pp. 7 ff.

² *Public Document No. 126*, 65th Congress.

BY-PRODUCT INDUSTRY

One of the most far-reaching and salutary effects of the war upon the coal industry in the United States, Canada, and Great Britain is the powerful stimulus it has exercised on the by-product coke industry. The present war has brought the people of these countries to realize their former dependence on Continental Europe, and on Germany in particular, for the by-products obtained in distilling coal, especially for dyestuffs. Up to a few years ago the United States was the most backward of all great nations in the manufacture of coal tar products.¹ Since 1915 all this has changed. The old beehive oven is being supplanted by by-product ovens to such an extent that in the three years from January 1, 1915, to January 1, 1918, the by-product coke production has practically doubled, and there has been as much gain as in the previous twenty years. In addition to the great stimulus given to the chemical and manufacturing industries by the supply of such an abundance of raw materials, one of the most valuable results of the introduction of the by-product coke ovens is the conservation of our coal supply. It is estimated that the ovens put in operation during the three years mentioned above will save annually to this country the fuel equivalent of 9,000,000 tons of coal.² The value of by-products obtained in the manufacture of coke in the United States from 1913 to 1915 was as follows: 1913, \$16,925,941; 1914, \$17,529,088; 1915, \$29,824,579.

In Great Britain the recovery of by-products from coal is being actively encouraged by the government along systematic lines with a view to future expansion of this industry on a large scale. A special Fuel Research Board has been organized for this purpose, and a fuel research station has been established to investigate the problem of replacing the greater proportion of raw coal now used by the substitution of various fuels obtainable from coal after the by-products have been extracted.³

¹ *Mineral Resources of the United States*, II (1915), 515.

² *Coal Age*, April 27, 1918, pp. 772 ff.

³ *Report of the Fuel Research Board*, London, 1917.

II. GERMANY

The German coal industry had been well organized for several years prior to the present war. The controlling factor, as far as production as well as distribution is concerned, was the Rhenish-Westphalian Coal Syndicate, a stock company organized in 1893 and comprising 67 members in 1914, with a total production in 1912 of 103,409,865 short tons of coal. The Syndicate also controls the transportation of coal on the Rhine and is closely allied with the leading coal dealers' cartels.¹

When at the outbreak of the war a general dislocation of industrial conditions developed, the coal situation in the German Empire was much less affected than in most other countries because of the fact that the coal industry was well organized. It is a significant fact that when war conditions finally made government regulation and control necessary the transition was accomplished by considerably less disturbance of trade conditions than in other countries where state control upset all the customary channels of trade.

The first great problem that came up at the beginning of the war was the threatened dissolution of the Rhenish-Westphalian Coal Syndicate. The voluntary syndicate agreement was to expire in November, 1915, and disagreements among the mine owners made the voluntary formation of a new syndicate improbable. The seriousness of the situation caused the Federal Council to issue a decree² on July 12, 1915, which provided for the formation of a compulsory syndicate unless the syndicate agreement would be renewed.

The compulsory syndicate was to be subject to the supervisory authority of the higher state officials. The Prussian Minister of Commerce would have the right of final decision in fixing prices, and a government official was to be a member of the board of directors with veto powers. This threat of state intervention led the colliery owners on October 14, 1916, to form a so-called "transition syndicate." Finally on April 1, 1917, the syndicate agreement was renewed for five years.

¹ *Report of the Federal Trade Commission on Co-operation in American Export Trade*, 1916, pp. 327 ff.

² *Reichs-Gesetzblatt*, 1915, No. 113, pp. 535 ff.

REGULATION OF PRICES

Maximum coal prices for the German Empire were fixed by the government as early as December, 1914.¹ As the war continued the coal situation grew more serious. Increased demand, decreased production, transportation difficulties, and coal shortages in the large cities brought further government action. On February 24, 1917, an Imperial Announcement relating to the Coal Trade² was published, authorizing the Chancellor to requisition the domestic production of hard coal and lignite and to cause producers or owners of coal to turn their stocks over to parties designated by him. He was also authorized to collect data regarding stocks on hand, production, and consumption. In case of disagreement the price of coal thus requisitioned is to be determined by a board of arbitration, appointed by the Chancellor and consisting of one representative each of the producers, of the coal trade, and of the Imperial Arbitration Board of War Economies.³

A special decree of February 28, 1917, authorized the appointment of an Imperial Commissioner of Coal Distribution.⁴ This office is to be attached to the War Department, but the Commissioner is to be independent in his decisions. The decree authorizes the Commissioner to organize branch offices for equalizing distribution. He is to have an advisory council, consisting of representatives of the Interior and Navy Departments, of the State Governments, the coal operators, the coal trade, and the consumers. The advisory council, whose members are appointed by the Chancellor and who serve without pay, is to be consulted by the Commissioner on all questions concerning fundamental policies.

PRODUCTION DURING THE WAR

During the war the production of coal in Germany has been wholly unequal to the ever-increasing demands. Table III indicates the output of coal, lignite, coke, and briquettes during the years 1913 to 1915 in metric tons.

¹ *Ibid.*, 1914, p. 516.

² *Ibid.*, 1917, p. 167.

³ *Ibid.*, 1917, p. 250.

⁴ *Ibid.*, 1917, p. 193.

Exact figures for 1916 and 1917 have not been published, but an official statement was issued recently^{*} stating that the production of coal has approximately reached the level prevailing prior to the war. From the following figures it will be seen that in 1914 the output of coal decreased almost 30,000,000 tons, or about 15 per cent, as compared with 1913, while in 1915 the output of coal was 44,798,804 tons less than in 1913. While the production of coal shows a heavy decline for 1914 and 1915, it is interesting to note that the output of lignite has increased. The reduction in the output is said to have been caused by three factors: an insufficient number of miners and their helpers, a lessening of the productive capacity of the labor force, and a lack of necessary equipment.

TABLE III

	1913	1914	1915
Coal.....	191,511,154	161,535,224	146,712,350
Lignite.....	87,116,343	83,946,906	88,369,554
Coke.....	32,167,716	27,324,712	26,359,430
Briquettes from coal.....	5,823,776	5,948,929	6,392,484
Briquettes from lignite.....	24,447,979	21,448,600	23,350,464

At the beginning of the war fully one-third of the coal miners were called to serve in the army. To make up for this loss of men, the outside men at the mines were replaced largely with women and boys, so that the former might work on the inside. Many prisoners of war were also employed for work in the mines. From time to time soldiers were furloughed to help in increasing the production. In July, 1916, the average output per man per shift was 1.01 metric tons of coal. In April, 1917, the Langenbrahm mine, working under favorable conditions, showed an average of only 0.9 ton, and its total daily production had declined in the meantime from 1,260 to 784 tons.

The cost of production has risen considerably, due largely to increased wages. For the Langenbrahm mine the cost per metric ton was 8.69 marks (\$2.07) in July, 1916, and 16.16 marks (\$3.85) in April, 1917. Wages of German coal miners have increased from

^{*} *The Iron and Coal Trades Review*, 1918, p. 145.

50 to 100 per cent during the period from 1914 to 1917.¹ This increased cost of production led to an increase in prices. It has been estimated that the price of coal has advanced 93.5 per cent between 1914 and 1917, while coke prices advanced 72 per cent and the price of briquettes 48.7 per cent in the same period. The high cost of fuel was further augmented by increased costs of transportation, especially water freights, and by special coal taxes. On April 8, 1917, the Coal Tax Law² was enacted which puts a tax on domestic and imported coal. For domestic coal the tax amounts to 20 per cent of the value of the coal at the mouth of the mine. This tax is to be collected from the producer. Coal consumed at the mines and by colliery employees is exempt from this tax, as is also coal used in the manufacture of oils, fats, wax, etc.

The extraordinary demands made upon the railroads by the military authorities materially reduced the output of the mines. Large stocks of coal accumulated at the mines and idle shifts had to be introduced. When the difficulties in distribution began to increase in 1915, the State Mining Administration in the Ruhr district established a general merchant association for the disposal of coal from the government mines. A sales organization was formed for this purpose at Duisburg, with a branch at Mannheim. Later similar sales organizations were formed at Cologne and Hanover.

One of the first steps of an industrial character taken by the German government at the outbreak of the war was to stimulate, so far as possible, the output of coke in order to increase the production of by-products. As a result of the government's action the adoption of coke as a substitute for coal has become more and more general on railroads and for industrial purposes.

Notwithstanding the decrease in production of the German coal mines and the increased domestic demand for coal by war industries, Germany has been able to export limited quantities of coal to Switzerland, Holland, and the Scandinavian countries. This was made possible by the additional output of the Belgian and Polish

¹ *Ibid.*, April 19, 1918.

² *Reichs-Gesetzblatt*, 1917, p. 340.

collieries in the territories occupied by the Germans. On September 2, 1916, an agreement was made with Switzerland which provides among other things that Germany shall supply every month 253,000 tons of coal to Switzerland to be dealt out by the Central Office for the Supply of Coal in Switzerland, at Basel.¹

BELGIAN COAL MINES

Occupation of Belgium brought into German control a considerable annual coal tonnage. In 1913 Belgium produced 22,847,000 tons of coal; in 1915, 14,244,000 tons of coal, 484,000 tons of coke, and 1,202,000 tons of briquettes.

By a special order² the German Governor-General of Belgium on April 26, 1915, established an administrative corporation, the Central Coal Organization (Kohlenzentrale), to deal with all questions appertaining to the distribution of coal, coke, and briquettes produced in Belgium. The headquarters of this organization were located at Brussels, with branches at Liège, Charleroi, and Mons.³ All Belgian coal producers are compelled to place their entire output at the disposition of this organization, which attends to the distribution of the entire output of the Belgian coal mines. Under the special order the proceeds realized from the sale of the coal are to be turned over to the producers after deducting an adequate fee to cover the handling expenses.

III. FRANCE

Of the large coal-producing countries France was hit hardest by the war. As a result of the German occupation of the northern sections of France, nine Departments, covering 68 per cent of the coal supply of France, fell into the hands of Germany.

The normal coal production of the French collieries is about 40,000,000 tons per year. Since the beginning of the war the annual output of coal in France has been cut nearly in half, although more intensive exploitation of the mines in the uninvaded regions has somewhat increased the normal production. The increased output

¹ *The Iron and Coal Trades Review*, 1916, p. 581.

² *Gesetz- und Verordnungsblatt*, No. 65, p. 475.

³ *Ibid.*, No. 134, p. 1259, and No. 96, p. 783.

of the mines in the southern coal districts of France—St. Etienne, Alais, and Le Creusot—was made possible largely by Belgian and French refugees who formerly worked in the coal mines of Belgium and Northern France. The following figures show the total production of coal in France from 1913 to 1917: 1913, 40,843,618 tons; 1914, 29,786,505 tons; 1915, 19,908,000 tons; 1916, 21,477,000 tons; 1917, 28,960,000 tons.

France has never been able to supply sufficient domestic coal for her own requirements. Over against an annual normal production of 40,000,000 tons, the French coal consumption prior to the war averaged 60,000,000 tons per year. The normal shortage of approximately 20,000,000 tons was made up through importation. In 1913 the coal imports of France were as follows:

From Great Britain.....	11,257,000 tons
From Belgium.....	3,669,000 tons
From Germany.....	3,491,000 tons
From other countries.....	294,000 tons
Total.....	18,711,000 tons

Since 1914 the fall in production has been accompanied by a fall in consumption to about 40,000,000 tons, leaving the coal shortage as before—about 20,000,000 tons. Nearly all of the coal imported into France since 1914 has come from England. In 1914 imports from England amounted to 15,430,000 tons; in 1915 to 19,067,000 tons; in 1916 to 20,952,000 tons; and in 1917 to 18,470,000 tons.

REGULATION OF PRICES

In 1914 and 1915 the fuel situation in France was not alarming. In the beginning of 1916, however, the demand for coal increased both for munition plants and for private industries, and the increase in price of coal assumed disquieting proportions. Under normal conditions the average mine price of coal in France fluctuated between 10.8 francs and 15.8 francs. With the heavy decrease in production caused by the loss of the northern coal mines, in addition to increased demand and abnormally high freight rates for imported coal, the price of coal at the mine had increased in the winter of 1915-16 up to 70 francs per ton. Freight rates on

British coal had increased from 8 francs in 1914 to 60 francs per ton in April, 1916.¹

The French government now initiated a series of regulatory measures intended to curb speculative prices and to control distribution. By a special law of April 22, 1916,² it was provided that maximum prices be fixed for coal sold at the mines and for imported coal. A presidential decree appointed a central commission for fixing coal prices under the foregoing law. Maximum prices were first announced on August 8, 1916,³ and revised several times thereafter by subsequent ministerial decrees.

A decree of December 31, 1917,⁴ fixed maximum prices at the mines for the Savoie and Haute-Savoie basin, as follows: large screened coal, 52.25 francs; run of mine, 42.25 francs; small sizes, 32.25 to 37.25 francs. Maximum freight rates on contracts for the transportation of coal between British and French ports were fixed on May 27, 1916.

To insure greater co-operation among the government departments controlling the imported and French mined coal, a new Ministry of General Subsistence and Maritime Transports (*Ministère du ravitaillement général et des transports maritimes*) was organized, under a presidential decree of April 7, 1917,⁵ which took charge of all food and fuel supplies both domestic and imported. A special decree of June 1, 1917,⁶ created within the Ministry of Subsistence a Fuel Division (*Direction des combustibles*) and Mr. Duperrier, the chief engineer of bridges and highways, was appointed head of this division. By a decree of July 3, 1917, the general direction of the national fuel supply was transferred to the Minister of Munitions and War Manufactures, the Undersecretary of State for War Manufactures, M. Loucheur, to be in direct charge. The same decree also transfers to the same undersecretary the administration of coal mines, thus concentrating the control of production and distribution of coal in the same authority. On November 28, 1917, a Consulting Committee of Mines was created by a special decree to assist the Ministry of

¹ *L'Economiste français*, March, 1917, p. 270.

² *Journal officiel*, April 23, 1916, p. 3443.

³ *Ibid.*, August 9, 1917, pp. 7220 ff.

⁴ *Ibid.*, January 1, 1918, p. 91.

⁵ *Ibid.*, May 6, 1917, p. 3614.

⁶ *Ibid.*, June 6, 1917, p. 4411.

Armament and War Manufactures in increasing the production of the coal mines.

Considerable suffering on the part of small consumers who were largely at the mercy of profiteering coal speculators, who bought up coal from the importers and coal-mine operators, led to further government control of distribution. On April 29, 1917,¹ the Minister of Subsistence authorized the prefects of each county to organize coal apportionment commissions to be presided over by sub-prefects and to be composed of the general councillors of the county and of the mayors of the chief cities. Beginning with June 15, 1917, coal is to be sold to consumers only upon coal cards authorized by the above-named commissions. The maximum quantity of coal to be delivered weekly to each household is limited to 50 kilograms (110 lbs.). To prevent hoarding, coal dealers and others had to declare in the mayor's office before June 20, 1917, the quantity of coal in their possession in excess of 1,000 kilograms.

The importance of safeguarding the country's coal resources in the future is being fully recognized by French statesmen. It has been proposed to amend the French Mining Law of 1810 by modifying the duration of concessions and including the participation of the state in the profits of the mines. A recent bill² backed by the government provides that mines become the property of the state on the expiration of the concessions, the duration of which shall be limited to 99 years. The bill provides also that the state be given a progressive share in the profits after cumulative profits of 6 per cent on the share capital have been allotted to the proprietors. In the *exposé des motifs* accompanying the bill it is pointed out that the proposed reforms have already been put into effect through indirect methods.

In France as in Great Britain the coal industry has been heavily taxed during the war. A law of July 1, 1916,³ imposes a war excess-profits tax of 50 per cent on mine owners. The Budget Law⁴ of December 30, 1916, doubled the taxes on mining royalties

¹ *Ibid.*, April 30, 1917, pp. 3453 ff.

² *Ibid.*, Doc. Parl., 1917, Ch. Dep., p. 1956.

³ 12 Dalloz 177.

⁴ *Journal officiel*, Dec. 30, 1916, p. 11209.

and a decree of November 5, 1917,¹ imposed a tax of 5 centimes per ton on imported coal to pay the expenses of the national coal bureau.

IV. GREAT BRITAIN

The outbreak of the war came at a time when the British coal industry was in the midst of the most profitable period of its history. During the seven years from 1907 to 1914 prices, profits, and wages were higher and trade conditions generally more stable than in any previous period. A significant feature of the British coal trade during the period just mentioned was the combinistic movement, initiated by Lord Rhondda, who brought about an immense concentration of ownership in coal properties. About one-third of the output of the South Wales coal field was brought into the control of three combines—the Ocean-Wilson, the Cambrian, and the Ebbw Vale-Beynon combines. Formerly the producing and the marketing ends of the British coal trade were quite separate. Lord Rhondda was instrumental in bringing about a change by linking with his colliery interests some of the leading domestic selling agencies and a large proportion of the British coal export machinery, including numerous coal depots in foreign countries.

With the war a complete change has come over the whole coal industry and trade of Great Britain. Competition has been superseded by state regulation to such an extent that at the beginning of the present year the tentacles of the state almost entirely inclose the industry. A view of the complex government machinery which has displaced private control of Great Britain's coal industry may be gained from the following list of government departments:² Department of the Controller of Mines, Department of the Shipping Controller, War Trade Department (Coal Division), Coal Exports Committee, Ship Licensing Committee, Inter-Allied Chartering Executive, Italian Coal Committee, Bureau des Charbons of the Ministère des Travaux Publics, Paris, Central Executive Committee of Great Britain for the Supply of Coal to France and Italy. The most important of these departments and committees are now under the direction of the Controller of Coal Mines in whose hands

¹ *Journal officiel*, Nov. 5, 1917, p. 8903.

² *Statist*, 1918, p. 187.

the control of all the various phases of production and distribution has been gradually centralized.

Labor unrest in South Wales, which supplies most of the coal for the British navy, was the decisive factor which led directly to the taking over of the coal mines by the state. From the beginning of the war there had been trouble in South Wales, arising from the constant conflict between the coal miners and the colliery owners on the question of wages. Finally David Lloyd George, then Minister of Munitions, intervened and conceded the miners a 15 per cent bonus despite the opposition of the operators.

When, however, new disputes arose growing out of a further demand by the miners for a second 15 per cent increase of the war bonus and this trade dispute threatened to interfere seriously with Great Britain's coal supply, the British Government, by an order of the Board of Trade under Regulation 9G of the Defense of the Realm Act,¹ assumed control of all the coal mines in South Wales, on November 29, 1916, for the period of the war. On February 22, 1917, the remaining coal mines were placed under control of the government.

Up to the beginning of 1917 numerous voluntary emergency agreements had been put in operation for the purpose of coping with the extraordinary coal situation that had developed. The underlying purpose of all these schemes had been to interfere as little as possible with the ordinary trade channels. However all the various voluntary efforts were without permanent success. More stringent centralized government control became necessary. Accordingly on February 19, 1917, the Board of Trade established a separate office, the Coal Mines Department, to control the coal industry. Mr. Guy Calthrop, formerly general manager of the London and Northwestern Railway Company, was appointed Controller of Coal Mines. An advisory board consisting of seven representatives each of the colliery owners and of the Miners Federation, and a special board of financial advisers and special assistants in matters relating to the production and distribution of coal were attached to the Controller's office. The powers given to the

¹ *Defense of the Realm Manual*, 3d enlarged edition, revised to February 28, 1917, p. 315; see also *Board of Trade Journal*, February 22, 1917, p. 550.

Controller are very comprehensive and include full power to control the production, distribution, prices, and consumption of coal in so far as he may consider necessary.

REGULATION OF PRICES

Prior to taking over the coal mines the government had enacted a law limiting mine prices. In the early stages of the war difficulties of distribution, arising out of congested railway traffic, a heavy increase in domestic demand, and greatly decreased production, had resulted in ever-rising prices. To curb these the Price of Coal (Limitation) Act of July 29, 1915, was passed,¹ which established a maximum or "limitation" price for coal at the mines. It provides that the price of coal sold at the pit's mouth shall not exceed the average price for the same kind of coal realized during the twelve months ended June 30, 1914 by 4 shillings per ton. Later the Board of Trade authorized a further advance amounting to 2 shillings 6 pence per ton, in order to offset a wage increase granted miners. Thus the maximum price fixed by the government for coal at the mines amounts at the present time to the average price for the year ended June 30, 1914, plus \$1.62 per ton.

The commission of wholesalers and jobbers was regulated by the Wholesale Coal Prices Order of September 5, 1917. This order imposes a maximum of 1 shilling per ton to the pit head prices, in addition to the actual cost of transport, for coals for household consumption.

The profits of retail coal dealers in the provinces were regulated by the Retail Coal Prices Order of September 11, 1917. Under this order the prices at which coal delivered by vehicles from a depot, wharf, or railway siding, in lots of one ton or over, may be sold shall not exceed by more than 1 shilling per ton the price of the coal delivered at the depot, in addition to the cost of handling and delivery. The maximum retail prices in each locality are to be fixed by local authorities—borough, urban, and rural district councils in England, county and town councils in Scotland, and

¹ 5 and 6 Geo. 5. ch. 75. *Defense of the Realm Regulations* (monthly edition) consolidated and revised to March 31, 1917, edited by Alexander Pulling, C.B., p. 2.

borough and urban district councils, town commissioners, and rural district councils in Ireland. The local authorities after investigation of the figures submitted by the local coal merchants are to publish in the local press lists of prices allowed and the retail dealers must display these price schedules.

REGULATION OF LONDON RETAIL TRADE

During the winter of 1916-17 a serious coal shortage developed in London, the ordinary trade channels for distribution breaking down completely. To prevent recurrence of such a situation, a special Household Coal Distribution Order for London was put into operation August 10, 1917. This order covers an area comprising about two million separate houses and premises. A metropolitan Distribution Branch was established and charged with the execution and administration of the order. Under this order retail coal purchases are limited, for the period from October 1 to March 31, to from 2 cwts. per week for a house of not more than 4 rooms to 1 ton for a house of 7 rooms. For the period from April 1 to September 30 in each year the allowance shall be at the rate of half that provided for the former period. Additional allowances are provided for the aged, infirm, etc.

The order further provides that every person dealing in or selling coal in quantities exceeding 2 cwts. at one time shall register with the Controller. Each local authority shall appoint a Local Coal Overseer whose duty it shall be to report to the Controller on the requirements for the storing, handling, delivery, and retailing of coal within his district. and to recommend whatever improvements he finds necessary to safeguard the interests of consumers. The Local Coal Overseer also has charge of reserve stocks of coal. After October 1 no coal is to be sold or purchased except under a written requisition giving the existing stock available to the consumer. Special provisions are made to promote the selling of coal in small quantities and every encouragement is given to small dealers to continue in business.¹

The following table shows the maximum prices per net ton for household coal to consumers in London as issued in

¹ *The Iron and Coal Trades Review*, 1917, pp. 161 ff.

February, 1918, by the Mines Department of the Board of Trade:

Best selected house coal.....	39s. 6d.
Silkstone or seconds.....	37s. 6d.
Derby brights.....	36s. 6d.
Best kitchen, best cobbles or nuts.....	36s. 6d.
Hard cobbles or kitchen nuts.....	34s. 6d.
Stove coal.....	33s. 6d.

ZONING SCHEME

One of the most far-reaching changes brought about by the Controller is the so-called Redistribution Scheme, the purpose of which is to economize transport facilities by securing the consumption of coal as near as possible to the point of production. The necessary powers were provided by the Coal Transport Order of July 4, 1917. Long-distance and cross hauls are prohibited. The country is divided into twenty zones, to each of which is allocated a definite source of supply. The District Coal and Coke Supplies Committees were appointed to administer the provisions of this order. It was estimated that this arrangement would effect a transport saving of 700,000,000 ton miles annually.

The results attained by this zoning scheme appear not to have been entirely satisfactory.¹ It seems that the immediate effect of the order was widespread disorganization and complaints of short supplies and unsuitable deliveries. By more elastic methods of administration, however, conditions gradually appear to have improved. In accordance with secs. 2 and 3 of this order every contract of sale was abrogated on September 8, 1917, in order that a re-allocation of the supplies of coal might be effected.

CONTROL OF COLLIERIES

A comprehensive scheme of colliery control was effected by the Coal Mines Control Agreement (Confirmation) Act of January, 1918. In its original form and before it was enacted into law, this agreement was the subject of four months of negotiation between the Controller and representatives of the Mining Association. This law authorizes the Controller to take over in whole or in part

¹ *The Statist*, 1918, pp. 136 ff.

the management either of all coal-mining undertakings generally or of the undertakings in any particular district or of individual undertakings.

A feature of this act is a compensation scheme whereby colliery owners are to be paid a compensation in full satisfaction of all claims arising out of government control of the mines. The pre-war output is adopted as the standard output, and the pre-war average profits as standard profits. If the pre-war output is maintained, the standard profit is guaranteed, whether a colliery makes it or not. If the profits fall below this average, the difference will be made good by the Controller. When collieries fail to maintain their pre-war standard output, their profits will be reduced, but not quite in proportion to the decreased output.

The profits of the operators are limited in the most favorable cases to £200 plus 5 per cent in excess of pre-war profits. The remaining 95 per cent of the excess profits must be paid to the government—80 per cent in the form of Excess Profits Duty and 15 per cent as Coal Mines Excess Payments. This latter 15 per cent is to be used for the compensation of collieries that are unable to make their standard profits and to defray the administrative expenses of the Controller's Department. Excess profits are collected by the Commissioner of Internal Revenue.

The act provides that the owner of every colliery shall keep and furnish to the Controller at such times and in such form as the latter may determine such cost accounts, trading accounts, balance sheets, and other accounts as the Controller may require audited; and they must be verified in such manner as he may direct. The Controller, or any person appointed by him, may require the owner or any officer of a mine to furnish any information which may be reasonably required. All information thus obtained must, however, be treated as confidential. No dividends shall be paid and no bonus repaid in respect to any mine without the consent of the Controller. In case of any dispute arising under this agreement between the Controller and the owner not otherwise provided for, an arbitrator appointed by the Lord Chief Justice shall arbitrate the same. If an owner intends to close or abandon a mine he is required to give sixty days' notice. When the Controller closes a

mine the cost of maintaining and reinstating it does not fall on the state, but may on the application of District Associations be met by a levy on the district or group of districts in which it is situated. While mine operators' profits will be considerably curtailed under this law, it is quite generally conceded that they have made very substantial profits during the war, especially up to the time when the allowance of 1s. 6d. per day to the miners began and when the cost of supplies began to increase.¹

Still more drastic regulations, interfering in part with technical details of colliery workings, were announced by the Coal Controller on March 16, 1918. This latest order provides that no owner of a coal mine shall without previous notice to the Controller of Coal Mines incur any expenditure on sinking, widening, or deepening of shafts; on making or driving of slants or adits; opening or reopening of seams; erection or acquisition of any additional buildings, plant, or machinery not strictly required for the purposes of repair or maintenance.

The order provides further that no owner of a coal mine shall without previous written authority of the Controller of Coal Mines increase or decrease wages or bonus of mine officials or work people otherwise than in accordance with the awards or agreements of conciliation boards or other duly constituted machinery for regulating rates of wages.

PRODUCTION DURING THE WAR

One of the chief objects of government control in England has of course been to maintain the output of coal. The following table shows the annual production of coal in Great Britain for the past five years:

Year	Gross Tons
1913.....	287,698,617
1914.....	265,664,393
1915.....	253,206,081
1916.....	256,348,351
1917.....	248,473,119

From the foregoing figures it will be seen that the production of coal mined in Great Britain during the war has decreased con-

¹ *The Economist*, 1917, p. 287.

siderably as compared with the pre-war output. The production for the year 1917 amounts to approximately 40,000,000 tons less than the production for 1913, while the production for 1917 amounts to a decrease of 7,875,232 tons as compared with 1916. This decrease in output is attributed to the following causes: (1) labor shortage caused by enlistment, (2) lack of timber, (3) transportation difficulties, (4) strikes.

Labor shortage was the primary cause for the decline in production. In 1916 over 25 per cent of the men employed about the mines had enlisted for military service. This decrease in labor reflected itself immediately in a corresponding reduction in the output of coal, the production in 1914 being approximately 22,000,000 tons below that of 1913, while in 1915 it dropped about 34,000,000 tons below the production of 1913. In order to increase the output about 16,000 miners were exempted from war service and brought back to the mines.¹ Largely as a result of this the production of 1916 increased slightly over that of the preceding year, the increase amounting to about 3,000,000 tons. In 1917 there were 1,021,340 persons employed at the mines, amounting to a decrease of 106,558 on the pre-war year of 1913 but an increase of 23,277 persons on the figures of 1916. In many cases the places of young and vigorous trained men were taken by other workmen who came into the coal fields but who were much less efficient than the trained miners who had enlisted. Then too difficulty in obtaining coal-mining machinery and scarcity of skilled labor for working the machines held down production, so that last year's output was the lowest since the beginning of the war.

The timber shortage was mainly a scarcity of pitwood needed for propping up roofs in the mines. This scarcity was brought about by the curtailment of the importation of pitwood in order to economize shipping tonnage. To remedy this situation the government promoted the organization of Pitwood Associations, seven of which have been formed, to develop and make accessible the supply of home-grown timber. A Controller of Timber Supplies was appointed who has charge of supplying the collieries with pitwood and other necessary timber. Maximum prices were

¹ *Parliamentary Debates*, March 27, 1917, p. 278.

fixed for pitwood timber and stocks were limited to twelve months' future consumption.¹

Transportation difficulties kept down production in certain coal fields. In Wales, in the north of England, and in Scotland collieries have been able to work only irregularly owing to want of shipping to take away the cargoes for which licenses had been issued. In November, 1917, the executive of the Miners' Federation of Great Britain came to an agreement with the Coal Controller to secure greater mobility of labor employed in the coal mines during the war. Bureaus were established in various mining districts for the purpose of facilitating the removal of miners from districts where the mines are overcrowded, and from those places where there is irregular work and waste of man's producing power owing to shortage of shipping tonnage or railway cars available to haul the coal away. The men who remove from one district to another are to get the wage of the district which is higher, and in addition a subsistence allowance including railway fare. There are varying scales for married and single workers.²

Labor disputes and resulting strikes constituted a very important factor in keeping down the coal output. In 1916 there were 67 strikes in the coal mine fields, involving 61,611 work people. The duration of the disputes amounted to 310,600 working days. Conditions in 1917 were worse, for the number of strikes amounted to 116, involving 267,045 people and 1,098,400 working days.³ By referring to the annual production statistics given on page 594 one will readily see how these strikes are reflected in the decreased output of coal.

As a result of war conditions the powers of the Conciliation Boards have been virtually paralyzed. In the earlier stages of state control it was intended to retain as much as possible of the local machinery governing the relations between employers and workmen—the Conciliation Boards and their powers were to be respected and their decisions enforced. There were no other agencies by which discipline could be maintained. All this has

¹ *The Iron and Coal Trades Review*, 1917, pp. 163 and 541.

² *Ibid.*, 1917, p. 541.

³ *Ibid.*, 1918, p. 60.

changed. In most of the coal fields the Conciliation Boards and their agreements have ceased to count. The men carry their disputes to the Board of Trade or the Committee of Production and simply repudiate any obligation to submit wage differences to the decision of the boards. In consequence of this state of affairs discipline is said to have been completely undermined.¹

Miners' wages have been increased considerably since government control was established. Beginning with September 17, 1917, the so-called "war wage" was granted, amounting to an increase of 1s. 6d. a day for each day on which a man works or is ready to work and able to do work, and 9d. a day for boys under 16 years old. A feature of this arrangement is that increases are paid men when the mine is idle for lack of trade. This was done to give some relief to miners in the export districts where shipping losses cause irregular work. In 1916 the rates of wages of 865,000 workers in the coal regions were changed, the net increase in weekly wages amounting to £227,000. In 1917 the wages of 1,000,000 mine workers were increased, the increase in weekly wages amounting to £437,200.

EXPORT OF COAL

In the history of British commerce coal plays an all-important part, the foreign trade of Great Britain in the past having been in no small measure maintained on the basis of coal exports. Coal forms the bulk of British outward cargoes, in 1913 the estimated weight of all British exports amounting to 97,000,000 tons, of which about 76,500,000 tons was coal. By taking on cargoes of coal for export to overseas British shippers were able to bring back raw materials needed by British industries. By filling the ships both ways freight rates were reduced, and this meant for British industries lower costs of production and of marketing.

Prior to the war a feature of the British coal trade was the steady increase of foreign demand over home consumption. The war has changed this completely, for it has brought on an increase in home consumption, while export shipments have decreased. The two chief causes which brought about this change are abnormal

¹ *The Economist*, 1917, p. 527.

expansion in home markets to meet requirements for war and increasing shortage in the world's supply of tonnage.¹

The following table indicates the home consumption of coal as compared with the export trade in coal from 1913 to 1917:

	Home Consumption	Export Shipments
1913.....	191,000,000	97,719,996
1914.....	184,500,000	81,027,000
1915.....	193,000,000	59,952,000
1916.....	201,000,000	55,001,113
1917.....	201,000,000 (estimated)	51,341,487

If the export figures given above for 1913 are taken as a standard it will be seen that the British coal export tonnage has been reduced nearly half since the beginning of the war. In comparing the export figures with the production tonnage it will be seen that while in 1916 approximately 35 per cent of the tonnage produced was exported, in 1913 the coal exports amounted to only about 20 per cent.

Under government control the sole consideration with respect to the coal export trade was to meet the needs of home consumption and those of the allied countries. Neutrals were permitted to purchase only such quantities as state policy would allow. This involved great sacrifices to certain producing districts. Thus the Welsh district was obliged to give up the South American trade, which before the war amounted to more than 5,000,000 tons a year.

For the last three years the question of ocean freight rates has been a very serious factor in the export trade. While the rates allowed British vessels were subject to fixed schedules, regulated by the government, scarcity of tonnage and war risks resulted in excessive freight rates by neutral vessels. The following table indicates the average freight rates per ton in 1914 as compared with current rates in 1916:

	1914	1916
For Barcelona.....	9s. 4½d.	£17
For Port Said.....	9s. 7½d.	160s.
For River Plate.....	14s. 3 d.	130s.
For Gibraltar.....	7s. 9½d.	100s.

¹ *The Statist*, 1918, pp. 136 ff.

AFTER-THE-WAR PROBLEMS

Fully recognizing the important bearing of the coal industry upon Great Britain's future position as a world-power the British Government already has initiated comprehensive plans for the development and expansion of the British coal industry in connection with industrial reconstruction after the war.

Three committees or boards under the British Ministry of Reconstruction are working along these lines. The first is the Coal Conservation Committee. The purpose of this body is to consider and advise (1) what improvements can be effected in the present methods of mining coal with a view to prevent loss of coal in working and to minimize the cost of production; (2) what improvements can be effected in the present methods of using coal for production of power, light, and heat, and of recovering by-products with a view to insuring the greatest possible economy in production and the most advantageous use of coal; (3) whether, with a view to maintaining Great Britain's industrial and commercial position, it is desirable that any steps be taken in the near future, and if so, what steps, toward securing the development of new coal fields or the extension of coal fields already being worked.

This committee has already issued an interim report which deals with the extent to which conservation of coal will effect economy in the production of motive power and other forms of energy, with the resulting expansion of industry and with the steps necessary to attain these objects. The committee emphasizes the fact that 80,000,000 tons of coal are consumed yearly in the production of motive power in Great Britain, and finds that if the power supply in Great Britain were dealt with on comprehensive lines and advantage taken of the most modern engineering developments, the saving in coal throughout the country would in the near future amount to 55,000,000 tons annually on the present output of manufactured products apart from a possible saving on domestic coal consumption.¹

¹ The following comments in a recent number of a British journal (*The Statist*, March 2, 1918, p. 358) merit attention. In discussing lessons that have been learned from the war in so far as the British coal industry is concerned, the writer states: "One lesson is the great value of coal as a local and national asset. Another is that

V. OTHER EUROPEAN COUNTRIES

In the neutral countries—Sweden, Norway, Denmark, Holland, and Switzerland—the coal situation has become more and more difficult as the war continues. The manufacturing industries have been seriously paralyzed, and widespread suffering has been occasioned among household consumers by the unprecedented fuel shortage. These countries are almost wholly dependent upon Great Britain and Germany for their coal supply, but neither of these two countries has furnished them with anything like a sufficient supply. Only on very exacting conditions were limited fuel supplies to be had.

In Holland the Royal Coal Distribution Bureau has charge of the distribution of coal to the more important industries. Local fuel committees under the direction of the burgomasters supervise distribution in the provinces and towns.

In Switzerland the coal imports are controlled by the Central Office for the Supply of Coal, which has its headquarters at Basel. Maximum prices for imported coal in carloads were fixed by a decree of the Swiss Political Department, March 7, 1917. The imports of coal into Switzerland have been as follows during the past five years:¹ 1913, 3,379,000 tons; 1914, 3,108,000 tons; 1915, 3,311,000 tons; 1916, 3,151,600 tons; 1917, 2,286,000 tons. Approximately 90 per cent of the Swiss coal imports came from Germany. As a result of the serious coal shortage during the winter of 1917-18 the gas supply in the cities had to be cut down to a minimum and railroad traffic had to be greatly reduced. In Switzerland, as in Norway and Sweden, large water-power resources have

the old-time internecine competition and undercutting of prices mean wasted material and effort. A third is that the by-products of coal are an invaluable source of wealth, which has been shamefully neglected, and which must be tapped at home by patent recovery coke ovens all over the district. A fourth lesson is the need for a larger outlook—for imperial coal trade routes and depots, for cheaper ocean transport and co-ordinated facilities for handling coal from the pit's mouth to the port of shipment and from the port of shipment to its destination abroad. The coal export trade of the future promises to centre in larger and stronger hands which will combine and gather under associated control the functions of raising, shipping and selling coal, so that the whole business can be conducted on a larger scale, at a smaller cost, and with a maximum of efficiency."

¹ *L'Economiste français*, 1918, p. 458.

been utilized and are being developed to compensate for the shortage of coal.

In Sweden the fuel situation has become so critical during the war that the National Fuel Commission has commandeered all combustibles, including coal, coke, wood, and benzine. Coal and coke cards have been introduced, but they cover only about one-seventh of the normal consumption.¹ Owing to the scarcity of coal many railways and steamers are burning wood. The state is promoting the production of peat briquettes on a large scale. In the Swedish coal trade a general tendency to combine has been noticeable, and in Stockholm a concern has recently been incorporated, the A. B. Kol and Koks, with a capital of five and one-half million crowns, to concentrate that city's trade in coal and coke.²

Spain is one of the countries whose coal production has slightly increased during the war, although it is not sufficient to supply the domestic demand. The total production of bituminous, anthracite, and lignite coal has increased from 4,424,439 tons in 1914 to 5,588,594 tons in 1916, and the production for 1917 is estimated to be in excess of that of 1916. A significant development in connection with the coal industry of Spain is the formation of the National Coal Mining Council (*Consorcio Nacional Carbonero*), which embraces all the coal-mine owners of the country. It was organized under a royal decree of July 12, 1917.³ Under this decree all coal operators are combined into regional syndicates, which are represented by a total of 12 delegates, one for every 500,000 tons of production, in the Council. The latter has an official character and includes in its membership representatives of several government departments. The president of the Council is appointed by the government. According to the decree the principal objects of the Council are to increase production, to build railways, docks, and storage plants, and to regulate distribution and prices. Through a government bank the Council is to be subsidized. This is the first instance of a compulsory national coal

¹ *The Economist*, 1917, p. 39.

² *The Americas*, 1917, p. 18.

³ *Gaceta Madrid*, July 14, 1917.

syndicate with state participation along the lines of the Italian Sulphur Syndicate.

Russia like France has lost, for the time being at least, some of her largest coal-producing districts. The loss of the Dombrova coal field in Poland amounts to an annual loss in coal production of about 7,000,000 tons. The output of the Denez basin has decreased during the war to more than half of its normal production. The shutting off of British imports via Baltic ports and the Black Sea has further increased the coal shortage of Russia so that only about 20,000,000 tons of domestic production remain for that country's consumption. Throughout Russia oil, wood, and peat have quite generally replaced coal.

The Italian coal situation became acute with the country's entrance into the war. Formerly Italy got the bulk of its coal supply from Germany. During the past two years Great Britain supplied the bulk of Italy's coal, the imports of fuel amounting to about ten million tons in 1916 and slightly more in 1917. In 1916 the United States exported 1,770,668 tons of coal to Italy, in 1917, only 566,069 tons. High freight rates resulted in exorbitant coal prices until an arrangement was made with Great Britain by which maximum freight rates were fixed. At the same time maximum sales prices were established for imported coal by the director of the National Fuel Commission, De Vito.¹ The same decree of December 31, 1916, which established maximum prices provides further that retail coal prices shall be fixed by the prefects and that retailers' gross margins shall not be in excess of 5 lire (\$1.00) per ton.

Prior to 1914 not much coal was produced in Italy, but the great scarcity of coal since coal shipments from Germany ceased resulted in an increase in domestic production. In 1916 there were 148 coal mines active as against 59 in 1915, and the domestic production of lignite increased from 939,027 metric tons in 1915 to 1,282,819 in 1916, while the production of anthracite increased from 9,314 tons in 1915 to 18,544 in 1916. Freight rates on coal from Cardiff to Genoa had increased from 7s. per ton in July, 1914, to 26s. in May, 1915, and to 80s. in 1916.² In exceptional cases,

¹ *Collezione Celerifera delle leggi*, etc., Roma, January 20, 1917, pp. 47 f.

² *Journal des économistes*, 1918, pp. 190 ff.

it is reported, coal retailed as high as \$120 per ton. A Commissioner General for Fuel was appointed by a special decree of August 5, 1917.¹

VI. AUSTRALIA

In view of the fact that legislation in Australia is "advanced" to a degree unknown elsewhere in the world, a brief review of the price-fixing laws and other wartime legislation affecting the coal industry is of interest. The parliaments of all the Australian states, with the exception of Tasmania, early passed price-fixing legislation, and within two months of the commencement of the war tribunals with varying degrees of power were appointed to administer the several acts.²

In New South Wales the Necessary Commodities Control Act of 1914 provided for a commission of three to inquire into and to report as to what should be the highest selling prices of any "necessary commodities." Under this act coal, firewood, and other fuel were defined as "necessary commodities." On the report of the Commission, the Governor in Council fixed maximum prices, and the results of the work of the Commission, which had all the powers of the Supreme Court of the State, and a large staff of officers and inspectors were much more far-reaching and extensive than elsewhere in Australia.

In Queensland the Control of Trade Act of 1914 was almost identical in terms with the above-mentioned law of New South Wales. In Victoria the Price of Goods Act of 1914 lapsed for political reasons.

The Prices Regulation Act passed by the South Australian legislature in 1914 provided for a Price Regulation Commission of three members who were authorized in their absolute discretion to declare any commodity to be a necessary of life within the meaning of the act. In case any person failed to sell goods at the fixed price the goods became liable to forfeiture to be paid for at the fixed price.

The Control of Trade in War Time Act, 1914, of the State of Western Australia lapsed in 1915 and was not re-enacted.

¹ *Gazz. Uff.*, 9 agosto, 1917.

² H. L. Wilkinson, *State Regulation of Prices in Australia*, 1917, pp. 24 ff.

In 1916 the War Precautions Act was passed by the Federal Parliament and the Federal Government announced the power to control the prices of commodities under this act. A Price Fixing Commission was appointed to each state to assist and make recommendations as to prices. These, after being co-ordinated by a central department, formed recommendations on the basis of which prices were fixed through the Governor-General.

In November, 1916, a coal miners' strike occurred throughout Australia, and a complete stoppage of mining operations resulted. A special board, consisting of a Judge of the Supreme Court, was appointed by the Commonwealth Government to settle the hours of labor, wages, and working conditions, and at the same time fix the selling price of coal. A decision in favor of the striking employees was given by the judge, and the employers acquiesced, as the increased cost of mining that would result from the decision was to be compensated for by the board fixing the selling price of coal at such an increased rate that their profit was assured. The selling price was fixed after inquiry as to the cost of putting coal on the market and after making a fair allowance for profit.

On August 20, 1917, the War Precautions (Coal) Regulations¹ were promulgated which authorize the Minister of State for the Navy to appoint coal boards which are to regulate the supply of coal in the Commonwealth. Under these regulations all persons, firms, or companies possessing more than five tons of coal or coke must report the quantity and place of storage. Coal and coke shall not be sold or supplied to anyone for any purpose whatever without the written consent of the Minister for the Navy or the Coal Board. All stocks of coal in excess of five tons are subject to being turned over on written notice from the Minister or Coal Board to any other person, firm, or company specified in the notice, on payment of cost, including delivery charge, plus 10 per cent on such cost. All electric light and gas companies are prohibited from supplying electric current or gas for industrial purposes without written consent from the Minister or Coal Board.

¹ Australia, Statutory Rules, 1917, No. 195.

VII. CANADA

The coal situation in Canada in the course of the present war has had many points of similarity with conditions that developed in the United States during the same period. Transportation difficulties, coal shortages, and high prices in the chief centers of consumption developed almost parallel in both countries. This was caused largely by the close dependence of the great central provinces of Ontario and Quebec, the chief centers of population, upon the coal fields of Pennsylvania and Ohio for their coal supply. Notwithstanding the enormous coal resources of Canada, over 50 per cent of her domestic consumption is imported from the United States.¹

Table IV shows the imports of coal from the United States to Canada from 1913 to 1917.

TABLE IV

	1913	1914	1915	1916	1917
Bituminous.....	10,743,473	7,776,415	6,474,683	9,514,552	15,537,262
Anthracite.....	4,642,057	44,435,010	4,077,192	4,570,815	5,320,198
Coke.....	723,906	553,046	637,857	757,116	1,231,865
Bituminous dust...	2,816,423	2,509,632	2,580,141	3,505,236	.....

From the following figures it will be seen that the coal production of Canada has constantly decreased during the past five years: 1913, 15,012,178 tons; 1914, 13,637,529 tons; 1915, 13,267,023 tons; 1916, 14,483,395 tons; 1917, 14,015,588 tons.

In 1916 a government investigation of the coal situation was made under Order in Council No. 2777,² the results of which are contained in a report submitted to the Minister of Labour by W. F. O'Connor.

The objects of the investigation were to discover (1) whether the commodity was being unduly accumulated in the hands of the dealer, thus producing an artificial scarcity and an enhanced price; (2) whether the commodity was being offered for sale and being

¹ *The Production of Coal and Coke in Canada during the Calendar Year 1916*, Ottawa, 1917, p. 1.

² *Labour Gazette*, December, 1916, p. 1848.

sold by dealers at a fair price; and (3) whether any combines, local or other, existed among dealers for the stifling of competition by the fixing of a common price.

We quote the tables of costs for anthracite coal, as published in the report, for Montreal and Winnipeg respectively (Tables V and VI).¹

TABLE V

MONTREAL

	1913	1914	1915	1916
Cost, f.o.b. at mines.....	\$3.29	\$3.32	\$3.32	\$3.53
Freight.....	2.70	2.72	2.72	2.73
Receiving costs, overhead and fixed charges.....	1.50	1.65	1.70	1.95
Total.....	\$7.49	\$7.69	\$7.74	\$8.21
Selling price.....	8.00	8.25	8.25	8.55
Profit.....	\$.51	\$.56	\$.51	\$.34

TABLE VI

WINNIPEG

	1913	1914	1915	1916
Cost, f.o.b. at mines.....	\$3.40	\$3.40	\$3.40	\$3.65
Freight.....	4.40	4.40	4.40	4.40
Reshipping charges and loss through shrinkage and degradation, Port Arthur and Fort William.....	.80	.80	.80	.85
Overhead, fixed, and delivery charges.....	1.30	1.40	1.50	1.65
Total.....	\$9.90	\$10.00	\$10.10	\$10.55
Selling prices.....	10.75	10.75	10.25	11.15
Profit.....	\$.85	\$.75	\$.15	\$.60

The conclusions reached in the report were:

1. There was no evidence of undue accumulation at any time since the beginning of the war. Instead there was a general scarcity during the season of 1916-17, and at some places there prevailed at times almost a famine.

¹ *Labour Gazette*, June, 1917, pp. 479 ff.

2. Generally the prices charged had been fair. High prices had been imposed, but these were necessary on account of the high cost to the dealer.

3. There was no evidence of any general combine, but ample evidence of local combines made up of nearly all the local dealers in practically every city in Canada. The report states, however, that although such combinations were illegal their object had not been to enhance prices, but rather to avoid price-cutting wars and to stabilize prices.

The partial failure of the railroads to meet the situation, according to the report, was probably the main cause of the shortage, and governmental action in this respect is declared to be necessary to insure sufficient transportation.

GOVERNMENT CONTROL

The abnormal conditions in the Canadian coal trade which developed during the winter of 1916-17 finally resulted in government control. By the Order in Council of July 12, 1917, C. A. Magrath was appointed Fuel Controller for Canada with his office at Ottawa. Regulations governing the importation and sale of coal were issued by the Fuel Controller on October 26, 1917.¹ These regulations form the basis of all subsequent government action with respect to the coal industry and trade.

The main features of these regulations are as follows: (1) Every importer, broker, wholesaler, or retailer of coal must procure a permit from the Fuel Controller for authority to do business. The Controller may cancel or suspend any permit in case of short weight or for other sufficient cause, as to which he is sole judge. (2) Maximum mine prices shall be fixed upon agreement between the Fuel Controller and the coal operators. In case any operator fails to make an agreement satisfactory to the Fuel Controller the latter may himself fix the maximum prices and prescribe other terms and conditions governing the disposal of the output of the mine. (3) Brokers' commissions shall not exceed 30 cents per net ton, while wholesale dealers shall be allowed a net margin not exceeding 35 cents per net ton. The retailer's net margin is fixed at 50 cents

¹ *Canada Gazette*, Ottawa, October 31, 1917.

per net ton. Both wholesalers and retailers shall be allowed a reasonable charge for handling, overhead expenses, and fixed charges.

(4) The maximum price at which any size and grade of coal may be sold by a wholesale or a retail dealer during the first half of each month shall be the average delivered cost price to that dealer for the same grade and size of coal on hand on the first day of that month, plus a reasonable proportion of the cost of handling, overhead expense, and fixed charge plus the maximum wholesaler's or retailer's net margin. For the second half of the month the maximum price shall be based upon the average cost of coal on hand on the sixteenth day of the month. (5) Coal sales to consumers, with certain exceptions (railways, munition plants, asylums, hospitals) shall be limited to a two months' supply during the period from September 1 to April 1. (6) In case of emergency the Fuel Controller is authorized to requisition certain quantities of coal. (7) The Fuel Controller shall have access to all records of producers, dealers, and importers, and is to be supplied by them with all information required by him.

Further regulations, issued by the Fuel Controller on March 15, 1918,¹ provide that the government of each of the provinces of Canada may appoint a Provincial Fuel Administrator or Board of Administrators and such central provincial organization as may be deemed necessary. The duties of Fuel Administrators shall be:

- a) To supervise the distribution of all coal and fuel.
- b) To develop the demand for and supply of wood and other coal substitutes to the greatest possible extent.
- c) To promote and administer any organization prescribed by the Fuel Controller.
- d) To gather and compile statistics dealing with the production and consumption of fuel of all kinds within the province.
- e) To promote the greatest development of any coal areas available within the province.
- f) Generally to assist and advise the Fuel Controller.

The regulations further provide that the Council of any municipality may appoint a Local Fuel Commissioner or Board of

¹ *The Canada Gazette*, Ottawa, March 21, 1918.

Commissioners whose duties shall be to co-ordinate the work of fuel dealers in apportioning and delivering coal during any period of fuel scarcity, and to institute when necessary a system of controlling retail coal deliveries.

VIII. LATIN AMERICA

All of the Latin-American countries depend upon oversea countries for their coal supply. Very little coal is produced in South and Central America. There are small coal fields in Chile with a limited annual production which is not sufficient to supply that country's domestic consumption.¹ Coal seams discovered in Bolivia, Colombia, Ecuador, and Brazil have not been exploited as yet on a large scale.

In the past most of the coal imported into South and Central American countries came from Great Britain, and constituted one of the most lucrative elements of that country's foreign trade. Coal of excellent quality, superior shipping facilities, low freight rates, and a powerful and well-organized business organization domiciled in all the leading ports of Latin America have contributed to establish Great Britain firmly as the leading coal supplier of Central and South America.

During the present war British coal exports to South Atlantic ports have been greatly reduced. On the other hand, coal shipments from the United States have increased in tonnage and a promising beginning has been made of what may in course of time develop into a good export market for American coal. Table VII illustrates the exports of coal in tons from the United States to some of the leading Latin-American countries.

The reduced receipts of coal shipments from oversea countries have caused a serious coal shortage to develop throughout Latin-American countries which threatens the carrying on of the industrial activities and seriously discomforts private persons.

In 1914 Argentine's imports of coal were 3,421,517 tons; in 1915 they amounted to 2,543,887 tons, or nearly a million tons less; and in 1916 and 1917 they were reduced still more. In order to

¹ *South American Journal*, December 25, 1915.

relieve the increasing fuel shortage, the government made an inventory of coal stocks and has urged the use of quebracho wood, peat, lignite, and oil for fuel purposes. In view of the fact that the stock of coal in the country is insufficient for national requirements, the government issued a decree putting into force again Law 9482 allowing merchant steamers leaving Argentine ports for oversea destinations to take away only as much coal as is needed to reach their first port of call in South America.¹ Freight rates have also been a very troublesome factor in the coal situation. British coal, when obtainable, costs less in freight than American coal.

TABLE VII

	1913	1916	1917
Argentine.....	70,048	928,905	329,535
Brazil.....	279,933	785,381	687,372
Chile.....		260,468	399,466
Colombia.....		10,165	11,906
Cuba.....	1,275,538	1,333,961	1,385,126
Ecuador.....		22,609	16,025
Guatemala.....		12,950	1,010
Honduras.....		12,768	10,648
Jamaica.....		57,830	71,330
Panama.....	489,761	425,133	620,838
Peru.....		63,510	46,768
Uruguay.....	16,858	153,177	60,410

The coal shortage in Argentine and Brazil has caused the railway companies of those countries to substitute fuel oil, which is imported from Mexico, on their locomotives. In Brazil the government has recently made large loans to railway and coal-mining companies in order to stimulate the development of that country's coal resources.² In order to control the available coal supplies better than heretofore, a government Coal Supply Board was recently created.³ This Board, which has its main office at Rio de Janeiro, is composed of a representative of each of the ministries of Finance, Public Works, and Marine, and is authorized to appoint repre-

¹ *Review of the River Plata*, March 30, 1917.

² *Commerce Reports*, 1918, p. 729.

³ *Diario Oficial*, February 8, 1918.

sentatives in different cities of the country. The Board is charged with the direct purchase in foreign markets of as much coal as is permitted to be exported and of all the national coal which, with due respect to existing contracts, it is possible to obtain. It will also advise the government on the requisitioning of existing stocks of coal, and attend to applications for coal made by the Brazilian navy, public utilities, navigation companies, industrial enterprises, and individuals.

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[To be continued]

THE REQUISITES OF A NATIONAL FOOD POLICY

I. THE NATURE OF THE PROBLEM

It is a commonplace that wars require the efforts of all the people of the nations involved. The effective prosecution of so unusual a business necessitates the use of old and young, of man and woman; of brawn and brain, of habit and nerve cell; its success is contingent upon an organization of the bewildering variety of tasks which make up the industrial life of a nation into an articulate system which has a single objective. The army which engages an enemy three thousand miles from home is the cutting edge of a vast and gigantic machine which ramifies unto the utmost confines of the land and apportions tasks to all sorts and conditions of men. To push to success the military program, or even to frustrate the designs of the enemy, the fighting force must be fed, clothed, sheltered, and provided with a minimum of amusement and recreation. It must also be supplied with a countless number of instruments and materials which the machine-technique has made essential to modern arms. This supply must be adequate and continuous; it must be adapted to the exigencies of military strategy; its elements must be in proper proportion to each other. Further, the number of men sent to the front must be as large as can be withdrawn from industry and maintained there and the materials supplied must attain the nation's maximum.

This industrial problem of the organization of supplies is an aspect of the larger problem of general strategy. The aggregate of supplies required, its resolution into its various component commodities, and the problem of securing these are all dependent upon the larger military purpose. Yet at first blush the problem seems simple. One's experience in business, large or small, tells him that money is the indispensable means to the goods he craves. If he possess it, he can have even unto abundance; if he has it not, he must go empty and void. By analogy he concludes that money will of itself enable the government to supply its many and varied

wants and he tucks the enigmas of supply away within the confines of the perplexing problem of war finance. But further consideration shows that money is not the thing which is needed; that, since even to the wise the way of expenditure may be the road to folly, it is at best a very uncertain means to an end. Moreover it shows that in at least two very important respects the nation's needs are unlike yours or mine: first, it requires goods in unprecedentedly large quantities, and secondly, it demands many goods which the market does not supply. It asks of the industrial system what it has not been in the habit of furnishing.

But, in spite of the volume and novelty of the demand, many think that by ordinary purchase supplies can be obtained. They know that supplies of goods are constantly being increased to meet new demands; they know that new products are constantly being offered when the market is ready for them; they know that these things happen without collective thought on the part of society or collusion by the officers of the state. So they conclude that by bidding high enough the government can persuade private enterprises to turn out the goods which it requires. Perhaps eventually the requisite supplies might be obtained in this way. But it is a way beset not only with difficulties but with national peril. It involves an unnecessarily high expense, for very high prices are required to tempt men to tie up their capital in enterprises when a sudden termination of the war may render much property obsolescent. Besides, there is no calculated profit to determine how high a governmental department can bid for commodities, and experience testifies that prices go to unusual heights, driven by the competition between various departments of the government for a supply of mobile labor and materials smaller than their total demands. Even more important, much valuable time will be lost before the rate of production can properly be synchronized with the military program and the several volumes of the complementary goods necessary to it can be properly adjusted to each other. Since time and economy are of the essence of victory, it is unwise to leave the problem to the caprice of the price-system. Instead a carefully devised program with a clearly defined end seems imperative. This program must aim at a readjustment of an industrial system

which has grown up to meet the needs and whims of a people at peace with the world to the newer demands imposed by war. It must transform an industrial system which involves the materials, processes, and aims of economic life and stretches away from the production of the most elementary of raw materials at one extreme to the habits and fancies of the people at the other.

The food problem has its place as a part of this larger program of adjusting the industrial system to the demands of war. In the various aspects of its readjustment of consumption, production, and distribution of food, it affects profoundly the interests and the efficiency of the people at home and the soldiers at the front. The amount of food which must be produced depends upon the triple demand of the people at home, the civilian population of our allies, and the forces in the field. Its distribution involves numerous and baffling choices between conflicting interests. Its consumption requires the scrapping of the personal habits of a lifetime and the substitution thereof of others formed in the light of military necessity. The character of the program depends upon the duration of the unusual food conditions which have come in the wake of war. It is complicated by the varied fortunes which four years of war have brought to our allies. It is affected by dominant tendencies imposed upon the industrial system which the signing of a treaty of peace cannot soon remove. Because of its intimate association with the larger problem of supplies and its dependence upon peculiar circumstance, a statement of the requisites of a food program must wait upon an enumeration of the antecedents to which it must conform. Therefore it seems best, in the pages which immediately follow, to consider: (1) the situation in Germany with a view to the testimony which it gives upon the duration of the current food situation; (2) the peculiar food needs of our principal allies, Great Britain and France, and of the neutral nations of Europe; (3) the tendencies affecting the production of food which are accompaniments of war; and (4) the peculiar requirements laid upon this country. In view of these it will be possible to outline, not in any adequate fashion, but at least in its main aspects, a food policy for the current emergency.

II. THE FOOD SITUATION IN GERMANY

The strength of Germany lies in the adaptation of its industrial system to the exigencies of war. The adoption of the machine-technique made possible a large surplus above the industrial output of the more primitive system which it supplanted. But the ruling caste did not allow this to be wasted in competitive consumption or to be dissipated in increasing the several class standards of living. On the contrary economy and frugality were encouraged among the masses to the end that the greatest possible number of men and the largest amount of material might be freed from regular industrial employment or civilian consumption for military uses. Because the whole industrial system was fashioned with that probability in view, little time was lost after the outbreak of hostilities in converting it into a gigantic, complex, and effective engine of war. The policy that whatever was requisite for success in war should be produced at home meant that all the processes necessary to warfare could be carried on within the country. To the end of the largest possible direct participation in war the discipline of the German has stood his government in good stead, for long ago he learned the double lesson of getting the most out of his resources and of accepting discomfort and even less than a decent living without open revolt. The spirit of protest which hunger engenders in other people is likely in Germany hardly to exceed the bounds of personal discontent, for an effective control of schoolroom, press, and pulpit has successfully inhibited the organization of opinion which is a necessary antecedent to effective group action.

In some respects Germany's food situation is better, in some respects worse, than that of the other European belligerents. It has the advantage of not losing sight of the ideal of agricultural self-sufficiency in the four decades immediately preceding the war and of quickly giving its attention to the serious defects in the organization of food revealed in the earlier months of the war. Evidence of attention to this problem is revealed in the statistics of agricultural progress between 1887 and 1913. During this period population increased from 48,000,000 to 66,000,000, or 38 per cent. Yet from 1887 to 1912 the supply of vegetable foods

increased even more rapidly. The production of rye increased from 5,867,800 to 11,012,861 tons, or 97 per cent;¹ of wheat from 2,585,200 to 3,962,390 tons, or 54 per cent; of potatoes from 25,459,200 to 44,220,200 tons, or 72 per cent; of sugar from 991,000 to 2,590,000 tons, or 251 per cent, and of other food articles from 44 to 114 per cent.² At the beginning of the war Germany was producing nearly all the grain, potatoes, and sugar consumed in the country. In respect to meats the situation was by no means so favorable, only one-fourth of the beef, one-tenth of the pork, and one-twentieth of the mutton consumed being of domestic production. We have little direct evidence upon the increase of production—or more likely the decrease—since the beginning of the war, though there is an abundance of indirect evidence of all degrees of reputability. This indicates that despite the use of the labor of prisoners and an attempt to use food resources to produce only commodities of the highest food value conditions have been fluctuating from bad to worse, but with a steady drift toward worse. The best evidence seems to indicate that Germany has at best only about 70 per cent of the vegetable food and certainly not more than 40 per cent of the animal food

¹ To guard against inaccuracies due to the yield of unusual years the comparisons in the text are based upon an average of a number of years at the beginning and at the end of the period. The averages are for three, four, or five years, depending upon the length of time necessary to secure a fair statement for each of the crops considered. Because of this the percentages of increase stated in the text are lower than they would be had the first and last years been normal years and had it been possible to base conclusions upon a comparison of them. The use of a period of years applies also to all the other figures of agricultural production given in the text.

² It is impossible in the space available here to give a list of all the materials used and authorities consulted in the production of this article. The literature upon the subject of the food problem is voluminous. At present nearly seven hundred books, pamphlets, and magazine articles are available, and the number of titles is rapidly increasing. The great mass of this literature is, of course, worthless, and much of the important material is presented in books or articles which do not purport to deal directly with the food problem. A large part of the material actually used is listed in a select bibliography of the food problem prepared by the writer and published as a bulletin by the United States Food Administration. The reader who is looking for a statement of authorities is referred to that. The articles and statistical tables referred to there, however, contain only the figures upon which are based the calculations which give the figures used in the text, e.g., the statistics of annual production and consumption, from which the averages presented above have been calculated.

regarded as necessary in time of peace. This shortage is important, however, more as evidence of the large part of the population below the subsistence line than of the success of a policy of attrition in bringing Germany to terms.

But other conditions are affecting the food situation for better or for worse. Germany has never been completely cut off from foreign sources of supply. In the earlier years of the war the Roumanian surplus was available for German use, and there is at least the possibility that next year, if not this year, Roumanian wheat will again find its way into Germany. Frequently it has happened that the campaigns in the east or south which Germany has undertaken in the autumn have resulted in the capture of food supplies. Thus last autumn the seizure of a large supply of wheat in northern Italy was perhaps not altogether an accident. Besides, as we now know, the blockade of Germany has been by no means a success, and a great deal of food has poured in through neutral countries. And last, the extension of the German military lines has added to the country much fertile land. Some of this has already been put under cultivation. The greatest promise is the lands in the East which have either been annexed or have been made accessible by the collapse of Russia. The consensus of opinion among those who know the economic East seems to be that these lands will be of little avail this year. Whether they can be made to furnish a large food supply in 1919 or later depends largely upon the ability of the German government to organize the country for the furtherance of its own purposes.

On the whole the outstanding features of the German situation, so far as they affect the food problem, are two in number. The first is that, in view of German discipline, there is little to expect from a policy of attrition. The policy of the Allies may force an ever larger part of the population beyond the minimum necessary to keep health in the body for physical toil, but it is not likely to starve the population into surrender. If the war becomes an involuntary hunger strike, Germany's powers of endurance are likely to exceed those of any Western nation. The German armies may be kept back, the German government may be driven into bankruptcy, the German morale may be broken, a victory over

German arms may be achieved, but it is safe to say that economic inability to fight is not likely to be a cause of German defeat. So long as the losses in men do not greatly exceed the numbers added to the army by incoming classes, and so long as the industrial system is arranged to supply a large number of men for fighting and materials for them to fight with, the German government may, if it wills, keep up the struggle. The second important fact is that no matter how soon peace arrives a serious food problem will remain in Germany for some years to come. The production is low and disorganized, the personnel on the farms is far below normal, both in numbers and in ability, and for many groups the standards have been driven far below what is necessary for efficiency. Both of these facts point to the necessity of a food program which looks farther ahead than a few months—one that looks even to the problems of the production and distribution of food a decade after peace.

III. THE FOOD PROBLEM IN ALLIED AND NEUTRAL COUNTRIES

At the beginning of the war France was, as it had been for some time, a country of small farms. No less than 45 per cent of the population belonged to the agricultural class. On the eve of the present conflict it was consuming 379,000,000 bushels of wheat, 51,000,000 bushels of rye, 54,000,000 bushels of barley, and 314,000,000 bushels of oats annually. Of these totals 55,000,000 bushels of wheat, 3,000,000 bushels of rye, and 6,500,000 bushels of barley were imported. These and similar figures show that the country was producing approximately 86 per cent of the cereals consumed. A similar calculation indicates that about 85 per cent of the meat supply was produced at home; but in explanation of this figure it needs to be said that in France the normal per capita consumption of meat is only 79 pounds per annum as against 113 for Germany, 119 for Great Britain, and 171 for the United States.

This favorable situation has been radically changed by the war. In the first place, the large percentage of the population engaged in agriculture has caused the draft of fighting men to make larger drains upon agriculture with greater decreases in efficiency than in any belligerent country. In the second place, nitrates for fertilizer

which usually come from Chile have been very hard or almost impossible to get. In the third place, capital has not been available for improvements, depreciation has gone forward at a very rapid rate, and materials which otherwise would have gone into farm machinery have been diverted to war uses. In the fourth place, a very considerable amount of fertile soil has been usurped for military purposes and an even larger amount has fallen into the hands of the Germans.

France has of course resorted to various devices to overcome these tendencies to agricultural decline. The aged and the very young alike have been put in the fields; the labor of men back from the front, of prisoners, and of Chinese coolies has all been used; the production of certain products has been subsidized; and a rigid system of agricultural supervision by prefects has been established. But in spite of all this the supply of food has diminished and is still diminishing. The most reliable computations indicate that nearly, if not fully, 40 per cent of the agricultural area has been lost to cultivation and that the fertility of the most important crop-producing sections has declined by from 20 to 30 per cent. To grasp the significance of this one must note that if France were today to try to maintain its consumptive standards of 1913 it would have to import 60 per cent of its wheat, 48 per cent of its rye, 15 per cent of its barley, and 35 per cent of its oats. This general decrease in the consumption of staple commodities indicates the extent to which standards of consumption have been reduced and how close a considerable part of the population is to actual starvation. Yet the most serious aspect of the situation is that the land and its productive equipment are deteriorating from month to month, and that the tendencies bringing about a decrease are becoming more and more pronounced. Peace will leave France face to face with a serious food problem.

Because of its peculiar industrial organization Great Britain is very unlike France. Economically the British Isles are but the center of a vast industrial system which ramifies to the corners of the earth. It performs a few economic functions for a large part of the world, and other parts of the world perform many functions

essential to the welfare, and even the lives, of the inhabitants of the islands. Most important for our purpose England produces only a very small part of its food supply. Owing no doubt to its gradual development of the machine-technique, the surplus which the machine made possible has gone in large part to maintain higher competitive standards of living. Before the war its normal consumption per annum was far larger, not only in aggregate but per capita, than that of France or Germany. Yet only 3,000,000 bushels of wheat, 4,000,000 of barley, 17,000,000 of oats, and a paltry amount of sugar were produced at home. The small participation in food production indicates clearly enough the necessity under which Great Britain has been placed to keep open at all costs the avenues of maritime commerce. It also indicates alike that the war has decreased very little the food supply of the nation by any direct effect which it has had upon production, and that any increase in production which might be secured by vigorous governmental action cannot affect materially the significant factors in the food situation. In short the national food supply rests upon the double contingency of production in foreign countries and the shipping available for bringing the food to British ports. There is no evidence to indicate that even the countries farthest removed from the seat of the war have escaped the scarcity of materials and implements and the high costs which it has forced upon food production. To make the statement as hopeful as possible we may conclude that none of the countries whence comes the British supplies gives prospect of offering to the warring world a surplus above that available in 1914.

But the crux of the problem is not in production; it is in the shipping situation. The tonnage available for transportation has been greatly diminished by three causes. The first is the diversion of vessels—how large only those in the secrets of the governments can say—to war uses. The second is the large losses through destruction by mines and submarines, losses familiar to every reader of the newspapers. The third is a loss in the number of journeys which a ship can take in a given time, due to circuitous routing to avoid submarines. An attempt has been made to meet the situation by prohibiting the importation of nonessential

commodities. But, in view of the large number of imports for war uses, imports unknown to Great Britain before the war, the places of the nonessentials are filled without supplying sufficient accommodation to take food from the places where it is most plentiful to English ports. Whatever rosy promises ship-building may hold out, at this writing the combined construction in Great Britain and America is not yet equal to the losses caused by submarines. In view of this serious shortage relief can be found only by discontinuing long hauls and concentrating shipping upon routes connecting Great Britain with the countries close at hand.

Such concentration merely solves the immediate shipping problem in terms of another problem of production. It makes the food supplies of South America, Australia, and India less available than they were, and throws an increased burden upon Canada and the United States. This burden becomes the heavier when it is realized that the war has cut off England entirely from some of its important sources of supply. The situation as regards all foods may be clearly set forth in a brief summary of the principal ante-bellum sources of Great Britain's grain supply. Of the total of 11,204,713,700 pounds which was the normal importation at English ports before the war, 16.2 per cent came from Russia. Early in the war the closing of the Bosphorus prevented importations from Southern Russia where the great wheat fields lie, and more recently internal disorganization has stopped shipments from the northern part. The import of 206,563,500 pounds, or nearly 2 per cent of the supply, from Roumanian sources has ceased, while the cessation of imports from Austria, Germany, Italy, France, and the neutral countries adjacent has cut off another 4 or 5 per cent of the supply. Argentina used to furnish 1,487,082,200 pounds, or about 14 per cent of the total, and India and Australia smaller amounts. The supply from Argentina can now be obtained only by using scarce and expensive shipping facilities, and that of India and Australia, because of the almost prohibitive cost of carriage, is beyond reach. There is little likelihood that ships will be available before the war is over in sufficient number to allow a resumption of the old routes of trade and a tapping of the old sources of supply. On the contrary there is every reason for

believing that Great Britain will have to depend upon the nearer sources of supply, particularly upon Canada and the United States, for many years after the coming of peace.

What is true of the seriousness of the food situation in France and Great Britain is true, in their several degrees of the smaller belligerent countries, of their neutral neighbors, and even of non-participating nations far removed from the scene of combat. The great food-producing area is the northern temperate zone, the inhabitants of a large part of which are engaged in the present struggle. The southern temperate zone is of secondary importance. The arctic zones produce only enough for their indigenous populations, and the tropics do not yet produce enough of the staples to satisfy their own needs. Like Great Britain these countries, even though they lie within the great food-producing areas, are not self-sufficient. Italy and Spain, despite great home production, are large importers of grain, and Holland, Denmark, Norway, Sweden, and Switzerland are quite dependent upon imports.

It is characteristic of the war that the great dearth in the good things of life which the diversion of labor, materials, and land to other uses has caused has afflicted neutral as well as belligerent nations. The prices of the essential commodities are relatively steady the world over. A scarcity in one country, due to the war, causes prices to rise, and the higher prices attract goods from other countries in which prices are lower. The movement continues until prices in the exporting country rise enough to make sales abroad unprofitable. In this way countries which scrupulously keep the peace have to share the dearth of nations at war. Conditions alike among the smaller warring nations and among the neutrals indicate that they have their several food problems, problems which are likely to remain acute even after peace is made.

IV. FORCES RESPONSIBLE FOR THE FOOD PROBLEM

It seems unnecessary to elaborate at length the abstract principles which explain the decrease in food production and the emergence of a food problem in the wake of war. Many of the forces responsible for the problem are clearly apparent in the presen-

tation of the situation in France and Great Britain given above. Others are familiar to any student of the nature of modern warfare. A few words of abstract statement must suffice.

The first of two general groups of forces which reduce food production in time of war operate directly upon agriculture. Of this group the first and most obvious is the decrease in number and the decline in efficiency of agricultural laborers. Large numbers are drafted for the army who are habituated to farming just at the ages at which they are most efficient. The old men, the women, and the children who take their places are their equals neither in physical efficiency nor in their knowledge of agricultural methods. Nor can prisoners or imported laborers, who are worked in gangs under supervision by a system which contains many of the devices of slavery and lacks the incentive to efficiency which the free laborer has, be depended upon to secure really satisfactory results. To this depletion must be added the additional host who are drawn to industrial occupations by the lure of high wages paid in establishments engaged in war work. This drain is likely to be very severe in a country which in the past has depended for an urban labor supply upon a stream of immigrants which is now stopped. The scarcity of food among agricultural laborers, the lack of medical attention which comes with war, and the withdrawal of the comforts of peace further lowers efficiency and in turn food production.

The second of this group of forces directly lowering food production is the increasing difficulty of getting the materials which successful farming requires. If fertilizers are imported, war renders them difficult or impossible to procure. If they are of domestic origin, they have to take their precarious chances of transit upon a railway system which is being reorganized to accommodate itself to the expeditious movement of munitions of war. Farm machinery, like the soil, is constantly wearing out, and neglect and misuse, the inevitable accompaniments of management by amateurs, make the rate of obsolescence or depreciation a very high one. New machinery to take the place of that which has been scrapped is at best expensive, because it is made of the very productive elements out of which most munitions of war are made. Moreover, the supply of raw materials may be so limited as to allow little

if any of them to find their way into agricultural implements, or it may be that a shipping board puts them far down on the list of priorities of imports. It is also usually impossible for the farmer to pay cash for machinery, and borrowed capital is hard to obtain in war time, owing to the direct competition of the government which floats loans large enough to absorb nearly all the free capital.

In the third place the high prices which follow soon after the declaration of war give rise to great waste. Tempted to make profits while the making is good, the farmer is likely to sell even the produce which he would ordinarily keep for seed, trusting to buy in the spring at a lower price. More important still is the depletion in herds, where the increase is slow—a depletion that may cause scarcity for years to come. At present the supply of animals needed for breeding purposes in the United States and Canada, as well as in most European countries, has been reduced almost to the danger-point.

In the fourth place bare mention may be made of the huge quantity of land usurped by the modern battle front, the tendency on some fronts for the line to sway back and forth, and the destruction not only of current crops but also of orchards that only years will replace. An occupation of territory by an enemy, followed by his withdrawal, leaves behind a trail of destruction of buildings, fences, machinery, and equipment, and a desolate area of gullied and shell-strewn earth.

The second general group of forces reducing food production includes conditions which have their effect upon the whole industrial system. In the large they resolve themselves into an increase in the risk and uncertainty which accompanies business enterprise. They include capricious changes in prices, sudden changes in the industrial policy of the government, the inability to determine in advance the real effects of price control, the uncertainty about the duration of the war and what will follow it, and other major and minor forces of dissension. These are but manifestations of the general disarrangement which necessarily accompanies an adjustment of the industrial system to new conditions. The losses involved in adjusting men, materials, processes, and habits to new ends are fairly clear to anyone who has seriously thought about the

problem of the relationship of industry to war. Their extent and nature form a subject much too large and complex to be discussed here.

In passing it is of note that this disorganization is international as well as national. In fact the more a nation has depended upon others, the more likely it is to be seriously crippled by an attempt to meet new conditions. This disorganization cuts down the productive efficiency of the peoples who are not at war. We all know that in general goods are produced in the localities where favorable conditions make costs lowest, and that through a world-wide division of labor nations satisfy each other's wants. It has come about that the countries of Western Europe have specialized in the production of manufactured articles and have come to depend upon Russia, the Near East, the French and English colonies, and the two Americas for their raw materials and a large part of their food. In general, industry and business have been arranged upon the assumption that normal markets and means of communication are to remain open. By seriously crippling the communication upon which the division of labor depends the war is making more expensive specialization between nations. It takes away markets, increases the costs and makes difficult of purchase the materials essential to production, and robs of its effectiveness the contribution which the international organization of industry makes to the economy of production. Out of such maladjustments in economic organization comes a loss in economy of effort and in the use of resources which affect, along with the complementary processes of the industrial system, the sequence of acts which culminates in the production of food.

V. THE BURDEN PLACED UPON THE UNITED STATES

The argument above points to a serious shortage of food and a grave food problem which are likely to be with us until the end of the war. It gives no definite promise that this problem will be less acute or even that it will not be more menacing in the future. It points clearly to the United States as the country which must bear the brunt of the task of feeding the Allies. How great this task is and what the resources are with which it must be faced a brief survey of the situation will indicate.

As we have seen, even under peace conditions, Western Europe does not produce enough of the staple commodities to satisfy its wants. In respect to cereals France alone (unless Germany be included in the count) approaches self-sufficiency, and even it has to import the bulk of its supply of meat. To recite the list of our allies in the present struggle, or to name the nations which are not our enemies, is to present a catalogue of peoples who are seriously in need of subsistence. England, France, Italy, Belgium, Portugal, Spain, Switzerland, Denmark, Holland, Norway, and Sweden are in their respective degrees in need of all the food they can get. So far as supervision, regulation, and skilful devices can be made to work, waste has been eliminated throughout Western Europe; yet, for all that can be produced or imported, the supply falls short of the barest needs. In Italy and England, for instance, the consumption of sugar has been reduced to one ounce per day for each person, while for months the French have had even less. To take wheat, which is fairly representative of the range of staple commodities, an extremely conservative estimate places the needs of our allies for the current year at a surplus of 470,000,000 bushels of wheat and 550,000,000 bushels of other cereals above domestic production. Of this amount Canada can possibly furnish 120,000,000 bushels of wheat and 100,000,000 bushels of other cereals. For the remainder of the surplus the United States is the only accessible source of supply.

It need barely be mentioned in passing that scarcity is inevitably associated with high prices. While a great many ingenious devices have been used to keep prices down, the efforts of European governments have by no means been successful, and the prices which have official sanction are far in excess of the usual prices of peace times. High prices make food increasingly hard to get with increasing degrees of slimness of the pocket-book. The result is that a very large part of the population, of belligerent and neutral countries alike, are not getting enough to make them productively efficient and that no inconsiderable part of them are becoming an easy prey to disease. It is a situation of actual and potential famine in all of Western Europe which the United States is called upon to face.

It is hard for us to realize that the United States is much less favorably situated for producing a huge food surplus than it was thirty years ago. In the interim industrialism had made huge strides in the land and a great urban population has arisen to eat up a large part of the surplus of food produced by the farms. This change is indicated by a growth of the urban population in the twenty years from 1890 to 1910 from 22,720,223 to 42,625,383, or more than 80 per cent, while rural population during the same period increased from 40,227,491 to 49,348,883, or less than 25 per cent. If the same ratios have been maintained since 1910 urban population has now become one-half of the whole. In terms of food production decidedly more than one-half of our population now produces a very insignificant part of the food which it consumes, for the rural population includes all who live in towns of less than 2,500. The significance of the change is indicated by the following figures of the production, export, and consumption of typical food products. The comparison is between the average of the five-year period ending in 1895 and that ending in 1914. The average production of wheat per year for the former period was 476,678,000 bushels; for the latter 697,459,000 bushels, an increase of 46 per cent. Between these periods domestic consumption increased from 310,107,000 to 588,492,000 bushels, or about 90 per cent, while exports decreased from 166,571,000 to 104,945,000 bushels, or 37 per cent. The average production of corn for the former period was 1,602,171,000 bushels; for the latter 2,752,372,000 bushels, or an increase of 72 per cent. Consumption increased from 1,552,003,000 to 2,790,962,000 bushels, or 79 per cent, while exports decreased from 50,168,000 to 41,509,000 bushels, or 17 per cent. The figures upon sugar, beef, pork, and other staples lead to similar conclusions. The growth of industrial centers has given us an increasingly urban population which has been consuming a larger and larger part of the food surplus.

Our primary concern, however, is with current production and current consumption. Taking the leading food products we note that while in 1915 the production of wheat increased to 1,025,801,000 bushels, of which 332,465,000, or 37 per cent, was exported, the yield fell to 639,000,000 bushels in 1916, and the estimated

yield for 1917 is only 656,000,000 bushels. Our current normal consumption is about 575,000,000 bushels, leaving only about 80,000,000 bushels of wheat to be exported, if we continue the prodigal waste of the days before the war. The yield of corn for 1917 is estimated at 3,248,000,000 bushels, an increase of 495,628,000 bushels, or 18 per cent, over the average yield of the five years preceding the opening of the European war. Our crops of barley and rye, aggregating respectively 204,000,000 and 56,000,000 bushels, are not of a size to add appreciably to our surplus of food cereals. Like the corn crop, the crop of oats last year was particularly large, aggregating 1,533,000,000 bushels. These figures indicate that the great increase has been in corn and oats, cereals upon which neither we nor the Europeans have been depending for bread.

A very early estimate places the winter wheat crop for the current season at about 600,000,000 bushels, and indicates that the acreage devoted to spring wheat has increased 15 per cent over last season. These figures, promising as they are, do not indicate a yield at all large enough to dispose of the problem. In interpreting them it must be remembered that these figures are based upon acreage, and that the winter wheat crop was put in before the draft and the munition industries made their heaviest drain upon agricultural labor, and before the farms suffered from a dearth of machinery and capital due to a diversion of supplies to war industries.

For a time after the beginning of the war the domestic production, or more properly the marketing, of meat increased materially. This is evidenced by an increase in our exports of meat (excluding pork) from 493,848,000 pounds, which was the average for the three years before the war, to 1,339,193,000 pounds for the year ending June 30, 1916, or about 190 per cent. But the figures lose their significance when we remember that before the war Western Europe received only a very small part of its meat from the United States and that the last figure is small when compared with our export of wheat or with the meat annually consumed at home. Yet there is abundant evidence from all parts of the country that stocks are being seriously depleted and that the dearth of breeding animals

will prevent so large an annual slaughter in the immediate future. Taken together these figures indicate the nature and magnitude of the problem of economy in consumption, as well as a complicated problem in production, which we have to face this season, and perhaps for some seasons to come.

But our concern cannot stop with so short-sighted a consideration of the problem. If the war is to go beyond the present year we need to make our plans with that contingency in mind. If it stops within the year its effects upon the production of food cannot be immediately halted and the food problem will remain acute for some time to come. It is possible, of course, that without sacrificing the acreage of any crop, or interfering with the production of any commodity, we may increase our production of staple commodities. It has been said that the application in this country of the technical knowledge of agriculture that is available would provide the world with all the food it requires. But the trouble is that this knowledge cannot be quickly applied. Certain factors oppose a direct increase in the total food output. The inertia that clings to traditional methods is strong upon us. Just as inability to break habits may lead an individual to death, so an inability to depart from traditions may lead a nation to defeat. The available labor is smaller in quantity this year and less acquainted with agricultural processes than that used last year. There is a prospect that an increase in the size of the army will make still further inroads upon agricultural labor and will leave man power seriously depleted. Everywhere men are leaving the farms to become industrial laborers in establishments which have contracts for the production of materials of war. Since industries turning out non-essentials have not been closed, they have been supplying little of this extra demand, and the brunt of it is falling upon the farm laborers who can hardly be spared. When we note that the volume of immigration which for some years hovered about 1,000,000 per year has fallen to a paltry 300,000 we can see how great the demand for urban labor is. It is possible that a more extensive use of machinery may make up at least in part for this decrease in labor supply. But the capital necessary for purchasing machinery cannot be easily had, since the supply is limited and the

demands of the government are unprecedented. The increase in the rate of interest is causing land values to advance at a lower rate than food prices and this discourages investment at a high rate of interest. Besides, the demands upon our iron and steel industries for munitions of war alone are fully as large as their total output under peace conditions, a fact that indicates all too well the scarcity and high prices of farm machinery when the war is once under way.

Here, as always, we must remember that the productive elements out of which society must fashion its goods are limited, and that labor, materials, and equipment can be put to one, and to only one, use. Except for the land itself, there will be less of all of the elements of agricultural production than there was before the war. Total product may be somewhat increased by using better methods and superior knowledge. But this increase cannot make up for the deficit due to the causes enumerated. The supply of staple commodities can be increased only by devoting to their production the resources used in the past to produce other products.

VI. THE BASIS OF A FOOD POLICY

The analysis of the conditions out of which springs the food problem makes evident the principles which must dominate its solution. The pages above indicate that for many years to come the United States must either produce or save a large surplus of the staple food commodities above the needs of its civilian population. This can be accomplished by, and only by, diverting food and the stuff of which it is made from ordinary peace uses into this surplus available for our military forces and our allies.

The food problem, like all the great supply problems, can find a genuine solution only in a consciously formulated policy of diversion. Despite the conclusive proof which England and France have alike offered, that war, which is the most unusual of all businesses, can be carried on only if its requirements are made the dominant end of the industrial process, some well-meaning individuals still persist in the notion that business may be carried on as usual. They seem to think that in addition to the large and conglomerate volume of the good things of life which will allow luxury as usual

and pleasure as usual, an additional supply can in some magical way be conjured up to supply the requirements of the armed forces. It is argued that the stimulus of war enables the productive system to increase its output by taking up the "slack." In support of their belief perhaps it can be said that there have long been, and still exist, abundant opportunities of increasing production by the use of new lands, new technique, new organization, new governmental supervision, and the added labor of those who once lived in idleness. While it must be admitted that war has taught the people of Europe many things about efficiency which five years ago seemed beyond their grasp, it has given no evidence of being able to add to the ordinary total production materials of war which constitute fully a 35 per cent addition to the volume of goods turned out.¹

All the slack in our industrial system was taken up by the immediate stimulus of the European war in 1914 and 1915. It must also be remembered that efficiency comes only with the adaptation of the system to its new ends and cannot become very manifest until this process is well under way. Our recent experiences in the production of aircraft and ships, although based upon sound enough business principles as applied to peace conditions, can be characterized as dismal industrial failures. They are evidence of the waste which is a persistent, perhaps an inevitable, accompaniment of an enterprise into large-scale warfare by a nation of amateurs in knowledge of industrial society. The experimentation which is necessary to learning how to do the great tasks of war carries with it many such wastes. Many other wastes incident to the withdrawal of men and materials from industry have been recounted in the pages above and require no repetition here. In view of these conditions it seems fairly safe to say that war decreases rather than increases the total output of a nation. Certainly there is little evidence for a belief in a rising total output in a nation in which the industrial system has been organized to respond to public demand through the agency of a scheme of prices. But even if, in

¹ It is of course manifestly impossible to tell exactly the ratio borne by the aggregate of goods required for war purposes to the total of the technical product of the country. The estimate above is based upon a comparison of the expenditures involved in the annual war budget with the most reliable estimates of the value of the total product of American industry last year.

spite of losses and disorganization, production is to increase, this can come only after an adjustment to the new conditions is complete, and even then it promises at most an addition of only a small part to the total product of the country out of which must come the great supplies of a modern belligerent enterprise.

The general surplus of supplies which a civilian population must produce over and above its requirements, of which the food surplus is a single case, can be secured only by a policy of diversion. Since the resources in land, capital, and labor, under a given organization and technique, are limited, and tend to be decreased, new supplies can be had only at the expense of old ones. This diversion of economic resources to national purposes may be either direct or indirect. It is direct when consumers give up goods which immediately satisfy military demands, as for example bread which can be used to feed soldiers. It is less direct when the public abstains from purchasing an article which cannot be used, but the materials out of which it is made can be used, to produce a different article adapted to war uses. A case in point is that of automobiles, the materials of which can be converted into army trucks. The diversion is even more indirect when it occurs at an even earlier stage of the productive process, as for example when steel is diverted from structural uses in bridges and skyscrapers to submarine destroyers. From this it is evident that at earlier stages of the industrial process the limited amount of labor, machines, and other productive resources is more fluid, and therefore more easily diverted, than at the later stages. For a short war, to be fought upon a small scale, sufficient materials may be got by a diversion to war uses of goods which are intended for ordinary consumption. For a longer one requiring larger operations this source will be insufficient, and it will be necessary to go farther back and force unfinished goods into forms adapted to military ends. For a modern war of the first magnitude goods cannot be obtained in sufficient quantities and many goods cannot be got at all unless productive energy is diverted to new uses at an early stage of the productive process when it is still unspecialized and fluid. It is necessary to add that because our productive processes are long ones the adaptation of the industrial system as

a whole to the demands of war requires a carefully thought-out plan and no little time for its execution.

In respect to their ability to meet the demands of war nations may be divided into two classes, those whose industrial systems have been established with the possibility of war clearly in mind and those which have been contrived to meet no such end. In the former case in time of peace standards of living are kept low, thus limiting the amount of resources used in producing goods for personal use and leaving a large amount capable of being put to war uses. Further, in devising machines, in establishing plants, in arranging industrial establishments into a system, the alternative of military use is kept always in mind. Under such an arrangement a large volume of the materials of war can quickly be produced with small waste in conversion to new uses. In the other type of nation, on the contrary, productive energy is allowed to be spent upon the goods which meet the uses or fancies of those able to purchase them. No deliberate effort is made to save for national exigency a large share of the limited productive resources by keeping standards of living down, and machines, industrial plants, and the economic system have not been aimed in their growth at a rapid and easy conversion to unwonted uses. Under such arrangements it is with difficulty, with great loss of effort, and very slowly that the industrial system can be rearranged to meet the new ends.

In the present crisis our nation belongs to the second type, as did all of our allies at the beginning of the war; our antagonist has the military advantage of the first type of establishment. Furthermore, thus far we have relied quite largely for the diversion necessary to an adequate supply of war materials upon voluntary effort, while the enemy has used compulsion and definite design to divert productive resources to predetermined ends. To solve our problem adequately productive materials in their earlier and more fluid forms must by governmental order be turned to the production of war materials. In this case consumption can be restricted by the sheer inability of consumers to purchase the unnecessary articles with which they have hitherto loaded down their productive budgets. Failing such compulsion a rigid moral effort, directed

by intelligence and not by emotion, must be relied upon for a reduction of our consumption of the comforts and vanities of life. If by this latter means their market is taken away, producers will be forced to devote their resources to national uses.

Thus the diversion of productive resources to public ends requires of each of us a voluntary or compulsory rearrangement of individual and household budgets and radical changes in the habits of our lives. We must encourage direct diversion by reducing to a minimum our consumption of articles which can be used by our soldiers. But it is even more important that we give up the consumption of nonessential things in order that the productive energy which they embody be devoted to the accomplishment of the purpose in hand. The amount which we are forced to give up or voluntarily surrender constitutes a surplus over private consumption that measures the extent of our ability to wage war. We are fighting a nation which continues to be willing to reduce private consumption to the barest subsistence minimum. Unless a large surplus is produced we can gain no active participation in war and cannot hope for a victorious peace. The larger the surplus the shorter the war will be, and the nearer we are to victory.

VII. THE ESSENTIALS OF A FOOD POLICY

The general principles sketched above for the production of the supplies necessary to warfare apply to the food problem. Their translation into terms of the latter problem is easily made from the foregoing argument and requires a bare mention in conclusion.

First and most obvious is the obligation which the food problem imposes upon the consumer. Within the last year it has become a truism that we can all contribute to a military victory by abstaining from the over-consumption and waste of commodities like wheat, meat, and sugar, which without change of form can be used by our soldiers and our civilian allies. As yet it is not so clearly appreciated that many of our expenditures upon food get their necessity from social convention rather than from bodily need or physical or mental vigor. Before the war the consumption of food, both in quantity and in the wasteful methods of its prepara-

tion, was affected quite largely by a desire to do the proper thing. A great saving may be effected by keeping in mind the principle that the selection of articles for consumption must be based upon their food values rather than their customary positions in the dietary or social budget. More recently we have been trying to save staple foods for war uses by substituting for them other foods diverted from less important uses. As an immediate necessity much can be said in favor of this policy, provided the substitutes can be made to yield the food values which inhere in them. But as a part of a long-time program this is of doubtful wisdom, since the alternative is present of using the resources embodied in these substitutes to turn out products more in keeping with the conventional standards of American culinary technique.¹ While these and similar measures may be quite proper and fit so far as they go, they do not afford a solution of the food problem. They are based upon immediate considerations, overlook the period of several years during which there is every probability that for the Western world the problem will remain a serious one, and assume that the problem is limited to consumption. They constitute an attempt to solve the problem out of existing stocks of food. At best such a short-sighted policy will yield a bare minimum that will hardly tide the peoples of the allied countries through an emergency. It will not give them the supply of food which is necessary for health, for industrial efficiency, and for a vigorous population in the next generation.

¹ In this connection the reader probably recalls an order of the Food Administration requiring the purchaser of wheat products to purchase an equal number of pounds of bread materials made from other grains. Even as an emergency measure this order has two serious shortcomings. It makes possible the purchase of all the wheat flour desired by those who can pay a price equal to the price of the flour plus the price of the substitutes. Such individuals may turn the substitute to unimportant or wasteful uses or may not use it at all. It also leads to a great deal of waste on the part of earnest housewives who are anxious to help conserve food but whose kitchen technique comprehends no use of these substitutes. Almost any reader can testify to the many cases of waste due to each of these practices. As a long-time proposition the expediency of this rule must lie in a comparison of the waste attaching to the non-use or wasteful use of substitutes as compared with the smaller amount of food value produced by given resources when directed to the production of wheat than to the production of these substitutes. This conflict of values can be definitely settled only by the dietary, the culinary, and the agricultural experts.

Second is the burden which the food problem imposes upon the producer. It is his duty to see to it that his limited resources are used in such a way as to turn out products of maximum food value in comparison with the resources which have gone into them. Since huge quantities of staple products are required, he must not give his time, the labor of his men, his fertilizers, the use of his invested capital, and the properties of his soil to the costly production of fancy vegetables and meats which are intended to tickle the palate of the dietary aesthete. Under present conditions a non-regulated price system is not a proper guide to agricultural production. It has the double failing of leading too many people to produce articles which in the previous system have commanded high prices, to the end that the quantities of staple commodities are not properly apportioned, and of allowing the production of articles to suit the whims of those who can afford to pay. While it seems necessary to insure prices high enough to tempt farmers to produce, these prices to be effective must be carefully regulated. To the end of proper production the consumer can help the producer by refraining from buying unnecessary food products at prices attractive to the latter and thus tempting him to a wasteful use of resources.

But the real solution of the problem calls for a positive policy on the part of the government. By absolute prohibition, or by a denial of the use of essential materials, the state must see to it that food resources used in the production of nonessential food commodities be diverted to the production of essential commodities. But even more is necessary. The proper solution of the problem requires supplies larger than such makeshifts can offer. The government must see to it that where possible machinery is forthcoming to take the place of the labor which has gone into the army. It must divert capital from nonessential industrial uses to essential agricultural uses. And where a labor shortage threatens production it must see that an adequate labor supply is found. In resources of the soil the United States lacks nothing; the function of the state is to see that the auxiliary materials are forthcoming and that food be increased even at a sacrifice of nonessential industries.

Third is the burden which is placed upon the state to supervise the proper distribution of food. It must find principles for settling the claims between the civilian populations of our allies, our armies, and the civilian population at home. In addition the problem of distribution between the individuals which make up each of these groups is a difficult one. Fortunately only the last of these devolves upon those who are responsible for the national food policy. Even the bare outlines of the solution of these problems of distribution would require a great deal more space than this article occupies, and here it must be dismissed with a word. Economic theory and actual practice alike attest the possibility of the solution of these problems by authoritative regulation, including price-fixing. But it is safe to say that no authoritative policy can hope to succeed if it be formulated in ignorance of the nature of the price system and of the relation of particular prices to economic conduct.

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COMMERCIAL BANKING AND CAPITAL FORMATION

II

I. INTRODUCTION

It may be recalled that in the excerpts from standard treatises given in the first paper of this series¹ commercial banking was discussed from four points of view. Having considered the first three of these in the preceding article, we may now turn our attention to the fourth view, namely, that commercial banking is—or should be—related to commerce rather than to industry, to the manufacturing and marketing of goods rather than to the development of fixed capital in the form of plant and equipment.

This view of commercial banking has found incorporation in our banking legislation. It was the theory underlying our national banking law from the beginning, and it has been given added emphasis in connection with the Federal Reserve System. A large portion of the discussion preceding the recent reorganization of our banking system emphasized the importance of keeping bank assets liquid by (largely) confining the use of bank funds to short-time loans to business men engaged in the producing and marketing of goods, loans which would be “automatically self-liquidating” in two or three months through the sale of goods bought with the very funds that had been borrowed. Loans, the proceeds of which were used for the creation of fixed capital, plant, and equipment, were to be viewed with suspicion and restrained to the smallest possible minimum. Similarly, under the Federal Reserve act itself the regulations that have been laid down with reference to rediscounts, etc., draw a sharp line between investment and commercial uses of funds, and the attempt is being made, through these regulations and through the development of the trade acceptance, to confine the activities of our commercial banks mainly to the financing of commodities through the various stages of raw material, partly finished goods, and finished products in their passage through

¹ *Journal of Political Economy*, XXVI (May, 1918), p. 484-509.

the hands of producers, manufacturers, wholesalers, and retailers, respectively.

It will be noted that qualifying terms have been used above, such as "should be," "largely," and "mainly." These qualifications are necessary because it has long been recognized that our commercial banks are prone to ignore, in practice, the distinction between commercial and investment business. Writers on banking have doubtless been inclined, because of their desire to emphasize the importance of commercial loans in connection with the liquidity of assets, to underestimate somewhat the extent to which commercial bank funds are, in practice, loaned for non-commercial uses. But it should not be inferred that men such as Scott and Laughlin¹ fail to realize that a very considerable amount of loaning for investment uses has, in fact, developed.² Despite the provision of the national bank act forbidding loans on real estate and despite the emphasis in the Federal Reserve act upon "genuine commercial operations," it has been quite generally recognized that a considerable quantity of non-commercial (non-liquid) loans may safely be made, provided the bulk of the bank's assets grow out of live commercial operations. It is usually argued, however, that a disproportionate quantity of investment loans renders bank assets unliquid, endangering the ability of the banks to meet their demand obligations and consequently imperiling the entire credit structure. It is believed, therefore, that investment loans should be restrained and kept within very conservative bounds.

The purpose of this and a succeeding paper is (1) to indicate the extent to which the distinction between commercial and investment operations is ignored in actual banking practice, and (2) to

¹ See quotations in previous paper, *Journal of Political Economy*, XXVI (May, 1918), p. 492.

² Anderson writes, after referring to Scott, that "to one accustomed to this view . . . (the following table, showing the extent of investments by all banks) will occasion dismay." *The Value of Money*, p. 498. Scott was among the first however to point out specifically the various ways in which commercial banks do, in practice, extend loans for investment uses. He merely believes that the practice is dangerous, a fruitful cause of inflation. (See his "Investment vs. Commercial Banking" in *Proceedings of the Second Annual Convention of the Investment Bankers Association of America* [1913], pp. 81-84.) Numerous other writers have taken the same general stand, e.g., Cleveland, Barron, Geiger, Brandeis, Laughlin, and Ingles.

raise the question whether this banking practice has, in the main, any serious consequences. Does the traditional distinction between commercial and investment loans serve any practical purpose? Has the point of view presented in the previous paragraph with reference to the liquidity of bank assets any solid foundation?

II. THE MEANING OF "COMMERCIAL" LOANS

In order to estimate what proportion of the funds of commercial banks is devoted, in practice, to investment operations it will be necessary to make a preliminary analysis of banking terminology. There has been much confusion in the use of the term "commercial" as it relates to banking operations. Commercial loans are often regarded as synonymous with short-time loans; sometimes the term relates merely to credit extension devoted to the marketing of goods; and again "commercial paper" is technically limited to that which is sold through the intermediation of brokers or commercial paper houses. These varying uses of the term have led to much confusion as to the actual nature and scope of commercial banking operations.

In his recent volume on *The Value of Money* B. M. Anderson defines commercial paper as "all loans of a really liquid character, made by banks to merchants and others to pay for the purchase of goods in anticipation of a resale within the term of the loan which will enable the loan to be repaid at maturity. From this should be excluded, however, loans made to speculators."¹ As Anderson points out, this is not in accordance with the market or street use of the term, which regards that paper as "commercial" which is bought through commercial paper houses. It is rather the broad economic conception of *commercial* as distinguished from *industrial* business. It is on the basis of this conception of commercial paper that Anderson concludes that the commercial paper of all national and state banks and trust companies in the United States constitutes only 18.2 per cent of the total credit extensions of these banks.² A criticism of Anderson's analysis will serve as a convenient point of

¹ Anderson, *The Value of Money*, p. 499.

² Anderson, *op. cit.*, p. 509. Anderson believes this to be too conservative a figure (footnote, *ibid.*).

departure for a discussion of the investment operations of the commercial banking system.

In his analysis of commercial paper Anderson rules out manufacturer's paper from the commercial class, and in doing so is of course not without company. Our habit in the economic fraternity of drawing the line between industry and commerce—between “industrial organization” and “commercial organization”—at the manufacturer is, however, untenable from the standpoint of banking analysis. A manufacturer regards his raw materials as quick or liquid assets; they are considered in the trade to be quite as liquid as accounts or notes receivable from wholesalers or retailers. If two months are required to “finish” given raw materials and sell them to wholesalers, why should not a loan to pay for the purchase of these raw materials for manufacture be regarded as a commercial loan? To separate manufacturer's paper from wholesaler's paper is in effect to argue that there is for the purpose of banking analysis a vital difference between the creation of a form utility and the creation of a time, place, or possession utility.

The reason why manufacturer's paper should be classed as commercial may best be appreciated perhaps by a brief consideration of the basis on which a bank usually makes a loan to a manufacturer. If the financial statement of a manufacturer shows a satisfactory ratio of quick assets to current liabilities, and if other factors are in no wise disquieting, the loan will be made. The quick assets are cash, raw materials, partly finished and finished goods, and accounts and bills receivable for goods sold. The banker expects to be paid from the excess of inflow over outgo of funds during the period of the loan. Practically all of the inflow of funds comes, in fact, from goods already sold to wholesalers and retailers but not yet paid for, and from other goods being sold from day to day, or which could shortly be sold in case of compulsory liquidation. The means of payment to the banker therefor come from the sale of goods quite as much as in the case of loans to middlemen. Moreover, they come from these very middlemen themselves.¹ This same

¹The funds for repayment do not, it is true, come from the resale of specific goods purchased with the proceeds of the loan, but this fact in no sense renders the loan a non-commercial one. It may be added that in most cases under prevailing banking methods retailers are not repaid from the sale of specific goods bought in anticipation of such sale. See *infra*, p. 645.

analysis will obviously apply still farther back in the industrial process—with the producer of the raw materials. The “working capital” as distinguished from the fixed capital in the form of plant and equipment may, it seems to me, fairly be regarded as engaged in commercial business so far as the banking viewpoint is concerned. Ten thousand dollars borrowed from a bank by a producer of raw materials may in three months’ time convert itself into more than ten thousand dollars worth of raw materials that have been sold to a manufacturer. Nor does it matter, as one would infer from Anderson,¹ if some or even most of the proceeds of the loan are paid out as wages. If the laborers to whom the wages are paid bring forth the raw materials and start them on the way through the various stages of the industrial process, the funds borrowed are just as clearly being put to uses which provide the means for the automatic payment of the loan at maturity as when the funds are devoted to the purchase of goods by a retailer; and, as in the case of the manufacturer, the loan is, in fact, made with the knowledge that it will be paid from receipts from sales.

Anderson also rules out virtually all loans to agriculture as being non-commercial, whether the funds are used for growing and harvesting the crops, for fattening live stock, or for making permanent improvements, purchasing breed cattle, etc. To my way of thinking so long as the funds borrowed are put to uses which shortly result in products for sale which have a value equal to or in excess of the amount of the loan, we should regard such operations as commercial. It should be remembered that, as in the previous cases, the bank looks to the proceeds from sold goods for its payment. To use a common expression of the country banker, it is thus that the bank “sees the money coming back.”

It would seem that Anderson also unwarrantably narrows the scope of commercial operations when he insists that loans secured by warehouse receipts are not commercial loans when they represent “advances to live stock, grain and produce traders, and speculators on the Board of Trade, at the stockyards, etc.”² He admits that such loans are liquid, but argues that they are not commercial.

¹ *Op. cit.*, p. 500.

² *Ibid.*, p. 503.

This position is much harder to understand than that of ruling out manufacturer's paper, for economic science has generally regarded such operations as those listed above as the activities of middlemen engaged in the marketing or distribution process. So far as I can make out Anderson would, however, confine "commerce" exclusively to the activities of wholesalers and retailers, importers and exporters.¹

To guard against misinterpretation at this place the reader should bear in mind that I have not been arguing that *all* short-time loans made to producers, manufacturers, etc., are necessarily self-liquidating or that many of the funds thus borrowed are not put to investment uses. This whole question is reserved for later discussion. The present purpose is merely to show that from the standpoint of banking analysis the line between commerce and industry should be drawn, if drawn at all, between fixed or durable forms of capital goods, on the one hand, and circulating capital and consumption goods, on the other hand. The investment process, it is said, is, from the very nature of the use to which the funds are put slowly liquidating, while purchases and sales of raw materials, partly finished, and finished goods, are, in the nature of things, quickly liquidating operations. Plant and equipment represent investment business, whether in retailing or manufacturing, and materials and stocks of goods represent commercial business, wherever found.²

III. THE VARIOUS TYPES OF BANK LOANS

It will best serve the purposes of our present study if we drop for the moment the terms that we have been employing and shift

¹ One definition of "commerce" may of course be as good as another; but the test is applicability to the problem in hand. Anderson's restricted use of the term leads him to conclusions which are quite untenable. For instance, his fear that the banks of the financial centers possess so little genuine commercial paper available for rediscount that unless they be given power to rediscount investment paper they will be unable to expand credit sufficiently to meet the requirements in a period of crisis should be greatly weakened owing to the fact that the Federal Reserve Board does not limit "commercial paper" to loans devoted to wholesaling and retailing, importing and exporting but draws the line between fixed capital and circulating capital in the way that has been suggested above.

² Whether commercial business is all equally liquid is of course another question.

both our point of view and our terminology to that of the business world. The typical business man does not ordinarily distinguish between the commercial and investment aspects of his business; he is more likely to speak of his *fixed capital*—plant and equipment—and of his *working* or *operating* capital—materials, stocks of goods, etc. Under modern corporate conditions he borrows through or from various financial institutions no small proportion of both his fixed and working capital. Since this capital is borrowed in the form of money or liquid funds, the business man very naturally regards his capital, in the first instance, as money or its equivalent. To the business man, therefore, financial houses are institutions to which he may go when he wishes to borrow the necessary funds with which to build or operate a business.

As our financial fabric has developed, business men have of course looked to our so-called commercial banks as the main source of loans for working capital. Fixed capital is in considerable measure borrowed directly through investment institutions; but nowadays business men go either directly or indirectly to the commercial banks for an enormous amount of fixed capital.¹ In order to understand clearly the ways in which our commercial banks furnish the funds for fixed capital and the bearing of this upon the liquidity of bank assets in the modern business world it will be necessary to analyze briefly the various forms of loans now made by commercial banks. The purpose in hand is that of showing to what uses the funds borrowed are devoted in practice.

Commercial banks advance funds to the business world in four main ways: (a) by "unsecured" or non-collateral loans; (b) by collateral loans; (c) by the purchase of bank acceptances; and (d) by investments in bonds and stocks.

a) *Unsecured or non-collateral loans*.—The development of American business and banking methods since the Civil War, has been such that non-collateral ("commercial") loans do not always represent genuine commercial operations. For reasons which need not be discussed here it became a common practice in the latter part

¹ It should be recalled here that the funds of investment institutions do not necessarily arise out of cash operations anywhere. A savings deposit by A may be a check on a commercial bank which grew, originally, out of a loan from a commercial bank.

of the nineteenth century for producers and dealers to sell goods on open account, with an option to the buyer of paying cash shortly and receiving a discount. Time drafts were not drawn and presented for acceptance, and notes came to be required, in the main, only when the borrower's credit was doubtful or, in the case of extensions, when the open accounts ran to maturity and then were not paid. This change in commercial practice caused a corresponding change in the machinery of banking. Instead of discounting customers' notes or acceptances with a banker the business man who wanted to borrow presented his own unindorsed note to the banker. Producers of raw materials, manufacturers, jobbers, wholesalers, and retailers—all were to a greater or less extent buying and selling on credit. No class owned all its working capital; each had to borrow. Some classes of business men borrowed more extensively from banks than others, but this does not concern us here. Our present consideration is that in making a loan the bank ceased, under the changed credit methods, to rely for its security upon a specific and actually completed business transaction.

Under the old method, if wholesaler A had in his portfolio twenty thousand dollars in accepted drafts or notes of retailers he could discount each with the bank and get twenty thousand dollars less the discount. Under the new method the bank does not directly discount the accounts receivable of wholesaler A or undertake their collection at maturity for a commission or discount.¹ This would be impracticable, because, among other reasons, the precise date of payment of the open account is uncertain; advantage may be taken of the cash discount or the buyer may choose to wait until maturity. In any event the commercial bank has come in recent years to grant each customer a "line of credit" of such a total as the general condition of his business warrants.

The amount that may safely be loaned under these conditions can be ascertained only from an intimate personal acquaintanceship with the borrower and his business or from a study of a balance sheet or financial statement setting forth the condition of the business. The growing impersonality of modern business in the larger

¹ There are some financial houses in the larger cities, however, that have developed a special business of this sort.

centers and the growing size and complexity of business enterprise has more and more necessitated the use of the balance sheet as a basis of credit extension. Historically it appears that it was in the late seventies that financial statements were first used in procuring loans, though it was not until the nineties that their use became common even with the larger commercial banks.¹

Under this new method of loaning the bank does not look to specific commercial transactions for its security, but to the quick assets in general. Below is a financial statement which was presented to a large commercial bank as a basis for a loan. Its correctness had been attested by a certified public accountant.

RESOURCES

Manufactured merchandise.....	\$ 322,322.77
Raw material.....	86,926.42
Accounts and notes receivable.....	287,267.64
Cash.....	111,694.51
	<hr/>
	\$ 808,211.34
Real estate.....	207,860.59
Equipment.....	104,870.73
Furniture, fixtures, and supplies.....	48,126.78
	<hr/>
Total.....	\$1,169,069.44

LIABILITIES

Notes and accounts payable.....	\$ 143,202.20
Capital stock.....	400,000.00
Profit first six months.....	\$50,666.56
Profit second six months.....	75,568.62
Surplus.....	583,645.18
Reserve fund.....	27,222.06
Special reserve.....	15,000.00
	<hr/>
Total.....	\$1,169,069.44

A large loan was in fact granted on the evidence presented by this balance sheet. This is not the occasion for a detailed analysis of a financial statement, but, in brief, the evidence of ability to repay the loan is to be found in the ratio of quick assets to current

¹ With the small suburban banks of our cities and with country banks generally the statement is of course even now not generally used.

liabilities. The quick assets are the first four items; they total \$808,211.34. The current liabilities are the notes and accounts payable, \$143,202.20. Suppose this company applies for a loan of \$200,000. The banker sees that the company has to meet \$143,202.20 of obligations in the near future. Will it be able to repay in three months an additional obligation (a loan from the bank) of \$200,000? The company has cash amounting to \$111,694.51 and accounts and notes receivable amounting to \$287,267.64, a total of \$398,962.15, with which to meet a total indebtedness of \$343,202.20. But in addition the company has manufactured merchandise and raw material valued at \$409,249.19, much of which may be converted into cash within three months and most of which could be quickly disposed of without tremendous sacrifice in the event of liquidation, \$808,211.34 (total quick assets) — \$343,202.20 (total current liabilities) = \$465,009.14, the margin of security possessed by the bank. There could be a substantial loss in the accounts and notes receivable and a heavy shrinkage in the value of the manufactured merchandise and the raw material before the security of the loan would be seriously impaired. In fact in the case before us the security is more than ample—a considerably larger loan than \$200,000 might well be made.

But we have neglected one important item in our analysis. What use was made of the \$200,000 borrowed from the bank? If spent in the purchase of raw materials the quick assets are increased by \$200,000 and the margin of security is proportionally enlarged. Note in this case that the bank's margin of security would certainly be substantially larger than it would have been had it merely discounted for this manufacturer a large note receivable or an accepted trade draft growing out of an actually specific completed transaction, unless this latter were buttressed by a large amount of unattached assets. In fact I think it an open question whether the use of the discounted trade draft will in practice result in a sounder credit extension than the present method when efficiently operated. This is, however, another story.¹

¹ It may be noted here that the better banks do not discount trade acceptances without reference to the proportion of quick assets to current liabilities for the business as a whole. In other words, they refuse to rely upon the "specific" transaction.

To return to the use of this \$200,000 that is borrowed from the bank: suppose that instead of buying raw materials the manufacturer uses it for investment purposes—for new plant or equipment. Does this make the loan any less liquid than when the funds are devoted to commerce? The answer should be apparent that it does not. It might be argued, however, that it would be safer as well as more liquid if the funds were used for raw materials rather than for fixed capital. The answer is that, although such a use of the funds would result in the creation of additional quick assets, a larger loan could, and usually would, in consequence be made, so that the ultimate margin of liquid resources would remain the same as before.¹ In practice banks do not object to the use of funds borrowed on short-time paper without collateral for investment purposes so long as the ratio of quick assets to current liabilities is sufficiently ample to insure the payment of the loan from the excess of income over outgo;² and there is no reason why they should.³

Owing to the agitation in favor of genuine commercial operations in connection with the Federal Reserve System, bankers are now somewhat loath to admit that they sanction the employment of loans made by the foregoing method for investment uses, but the fact that a considerable percentage of such loans does go for the development of fixed capital is widely known. It is of course impossible to say precisely what percentage of non-collateral loans is in fact used for the creation of fixed capital; but the writer's estimate based on investigations extending over a period of several years would be at least 20 per cent.

¹ Modern businesses, as a rule, borrow pretty much to the limit imposed by their net resources.

² The extent to which quick assets must exceed current liabilities for the loan to be safe varies widely in different lines of business. For a time many bankers followed a rule-of-thumb "two to one" ratio, without much variation; but of recent years the analysis has come to be more and more that of "each case on its merits."

³ Again we must of course question the efficiency of the analysis that banks make under this method. The writer's studies in bank management have led him to believe that with the big commercial banks of the cities the analysis is now very efficient. While the statement is not commonly used in the small town banks there is nevertheless a fairly accurate knowledge of the probable excess of income over outgo during the period of the loan.

In concluding this discussion of loans without collateral it only remains to recall to the reader that in the process of making such loans the commercial banking system, through the process discussed in the preceding paper, has done something more than transfer funds from lenders to borrowers; it has multiplied its cash resources by sixteen—created liquid funds to \$16,000 for every \$1,000 of actual specie in bank vaults. It is usually stated that this is an expansion of the circulating medium. It will serve our present purpose better, however, to call it an expansion of “capital,” using the term in the popular business sense. This “capital,” moreover, let it be repeated, is only partly “working” or “operating” capital; to the extent that the funds borrowed are employed in the creation of plant and equipment it is “fixed” capital that has thus been augmented.

b) *Collateral loans*.—In undertaking a study of collateral loans it will prove serviceable to consider, first, under what circumstances collateral security is required or given. Broadly speaking, we may say that the theory underlying the hypothecation of collateral with a bank is, sometimes, that there is doubt as to the ability of the borrower to pay the loan promptly at maturity and, again, that the business of the borrower is of such a nature that no serious inconvenience attaches to the deposit with the bank of acceptable collateral security. Conversely, if we may regress for a moment, the theory underlying the non-collateral loan is in part that there is so little chance of the nonpayment of the loan at maturity that to require collateral is to insist upon superfluous protection, and in part that, owing to the nature of his business, the borrower possesses no collateral which he could conveniently offer as security. The first of these reasons of course relates to the commercial use of the funds borrowed, or to an accurate appraisal of the excess of income over outgo during the period of the loan. But even if the risk of nonpayment were not negligible, it would nevertheless be impossible, in many instances, for the borrower to put up collateral, for a merchant cannot deposit his wares with the bank and at the same time display them for the purpose of sale. He would need either to give the banker a chattel mortgage on his goods or else deposit securities of some sort which he chanced to own. The

chattel mortgage would require no little expense and, moreover, there are legal obstacles to its convenient use. As for securities the business man seldom owns stocks and bonds in sufficient quantity to serve as collateral for all the working capital which he must borrow, if, indeed, what he may own is not already in use as collateral for borrowed fixed capital.

Returning now to the theory of the collateral loan, it should be borne in mind that the risk of nonpayment at maturity, where it exists, does not necessarily reflect upon the character of the borrower; it is an indication, rather, that the use to which the funds borrowed are devoted is such that they do not give ordinary assurance that the loan will be paid *at maturity*. Such loans are made for consumptive, investment, or speculative uses rather than for ordinary commercial purposes.

It should be noted, however, that this is not always the case. Whenever goods are stored in warehouses we are likely to find that the owner hypothecates the warehouse receipt with the banker when he borrows working capital. This indicates neither that the character of the borrower is bad nor that his business is not of a commercial nature. Wheat, whiskey, canned goods, and cotton are examples of warehoused goods receipts against which are often used as collateral. Such transactions may or may not be of a speculative nature. In many instances, certainly, the reason for requiring collateral is that collateral is available because the way in which the goods are handled is such as to give rise to a legal instrument adapted for use as collateral.¹

Similarly the use of bills of lading as collateral does not necessarily bespeak any great risk of nonpayment; and it certainly does not denote a non-commercial employment of funds. The bill of lading is necessary, first, as an evidence that the railroad has received goods for shipment, and its use as collateral is primarily due to the fact that the shipper has here a piece of documentary evidence of an actual commercial transaction—evidence, moreover, in such a form as to be conveniently turned over to the bank as collateral security for the goods in transit. He is thus enabled to borrow on a narrower margin of security. It should be noted,

¹ The great development of warehousing in recent years is making this form of loan increasingly common.

moreover, that loans on warehouse receipts and bills of lading furnish working capital.

But we are here concerned with loans that are made for non-commercial purposes and with collateral in the form of stocks and bonds. Stocks and bonds are hypothecated with banks in order to secure funds for three main purposes: consumption, investment, and speculation.¹ Discussion of the consumptive loans may be passed by, for they are relatively unimportant. By investment collateral loans we mean loans to business men who use the funds in the creation of fixed capital. Collateral is in such cases required primarily in order to protect the bank in case the loan is not paid at maturity, to enable it to get cash through the sale of the collateral.

The speculative collateral loans require more careful consideration. First, what does the term "speculative" mean? Is speculative borrowing to be differentiated from commercial and investment borrowing, or are the funds thus borrowed merely devoted to commercial or investment business, as the case may be, that is of an especially risky nature. From the business viewpoint do speculative loans provide working or fixed capital? It will be necessary to discuss in turn the several types of borrowers that are associated with the securities markets.

1. Financial houses which underwrite the sale of securities borrow extensively from banks. From the standpoint of the underwriters these borrowed funds are working capital. They constitute the means whereby they finance their underwriting operations and are of course not used by the underwriters in the creation of plant and equipment. From this point of view it is apparent that the business of the underwriter is closely akin to certain phases of commercial business, such as that of the traders in grain, cotton, and live stock. But since bonds and stock are less staple and more speculative than crops and cattle there is a greater risk that stock-exchange loans cannot be promptly paid at maturity.

From the point of view of the uses to which the funds borrowed by the underwriters are eventually devoted, however, we find that they are aiding investment operations. In advancing funds to

¹ Commercial borrowers, whose unsecured credit is not of the best, of course often borrow on collateral; but such loans need not be discussed here.

corporations, pending the ultimate absorption of securities, underwriters enable the corporations to begin operations more quickly than would otherwise be possible. It follows that to the extent that the underwriters borrow from commercial banks the banks are, in final analysis, advancing through this process funds for fixed capital uses.

2. Bond houses and stockbrokers engaged in the marketing of investment securities hypothecate unsold holdings with commercial banks as security for working capital. Here we have a very close analogy to ordinary commercial business. Instead of stocks of goods the bond house and stockbroker have bonds and shares for sale. But since such wares are much more likely to fluctuate widely in value than are articles of staple consumption there is a greater necessity for collateral security. It must be borne in mind, however, that these businesses are of such nature that it is easy to put up collateral. The bonds and shares, unlike merchandise, do not have to be on display. As we shall presently see, it is quite possible that banks would assume the risks of such loans without the deposit of collateral were there any necessity for so doing.

It should be observed here, again, that while the bond house and stockbroker borrow working capital on this collateral security the funds are in fact ultimately used in the development of fixed capital in the corporations whose securities they are marketing.

3. There is a vast business of buying on margins in which stocks and bonds are used as collateral. In connection with this business it is important to note that the brokers temporarily borrow from the banks without depositing collateral. This was once generally done through the process of overcertification but now is done by "morning" loans—at least so far as the national banks are concerned. The broker's customer puts up a margin of, say, 10 per cent with which to buy \$10,000 of stock. On this \$10,000 of stock as security the bank would loan, let us say, 80 per cent, or \$8,000. Thus the client furnishes \$1,000, the bank \$8,000, and the broker \$1,000 in the purchase of \$10,000 worth of stock. But it is evident that the stock cannot be hypothecated with the bank until the broker has it, and that he cannot gain possession of it until he has paid for it. The broker therefore borrows \$8,000 from the bank

on his personal security. Under the method of overcertification he draws a check against the bank for \$10,000 and the bank certifies it, although his balance there is only \$2,000, including the margin advanced by the customer. With this check the broker buys the stock, which he then deposits as security for the loan of \$8,000. With the "morning" loan the broker is extended a daily line of credit proportioned to his requirements and conditioned by the maintenance on his part of a satisfactory net daily balance with the bank. In either case it will be observed that, pending the delivery of the collateral, the bank has made unsecured loans. There is small risk in this practice, for the broker's reputation and business ability are examined with great care before the loan is granted. Such loans, moreover, are of extremely short duration. As soon as the stock is purchased it must be deposited as collateral, and the loan then becomes a secured one. But there is clearly an interval of time in which all such loans are without security other than the personal character and the unattached property of the borrower. It should be noted here also that when an unsecured loan is made to a merchant there is a large amount of liquid assets to fall back upon in case of trouble, while in the case of brokers' loans there is as a rule only a meager cash balance in the bank.

It will be observed from the foregoing analysis that the brokers borrow working capital (and they possess little that is not borrowed) from the commercial banks.

Turning to a consideration of the ultimate uses to which the funds thus borrowed are devoted we find, however, a somewhat different situation. It is to be observed, first, that these vast investments in corporate securities are largely financed by the commercial banks. Assuming a 20 per cent margin of collateral, 80 per cent of the funds devoted to margin speculation is borrowed from the banks. Here again the commercial banks are really furnishing funds for investment purposes, for from one angle we find that such funds represent the purchase money for securities sold for the purpose of raising fixed capital. The corporations which issue the securities are making investment uses of the funds thus borrowed—not of the specific funds, it is true, but of generalized funds, the ownership of which is merely being constantly shifted as the

securities are bought and sold in the market. Somebody, regardless of the shifting of ownership, is permanently out of funds which the corporation is using; and it is some commercial bank that is always furnishing the greater portion of such funds.

Viewed from one angle we call such operations "speculative" in their nature. This is of course an acceptable appellation so far as the purpose of the margin trader is concerned when he makes his purchase. But it is to be observed that this fact in no wise affects the other fact that through the process of loaning on collateral the commercial banks advance great quantities of funds which are used for fixed capital.

It should perhaps be noted in passing that the active market provided for such securities by this speculative trading is indispensable to a successful original sale of securities. One will buy securities with temporarily idle funds provided he is assured a ready sale at any time he may prefer to have his resources in the form of cash. Business men are coming more and more to make investments in bonds for short periods of time during slack business seasons; while banks have of course long carried securities as temporary investments during periods of easy money in their particular communities. Because of this active market we therefore not only induce original investments, but we enable business men in general to keep at all times a much larger proportion of their resources profitably employed than would otherwise be possible, and hence enable corporations to use continuously a larger total of borrowed funds than would be possible if investments were confined to those who could spare funds permanently. It is in no small degree owing to this flexibility in the financial structure as a whole that modern business can be conducted on so vast a scale. And it is the loaning on collateral by the commercial banks which makes this flexibility possible.

In concluding this discussion of collateral loans it is to be noted again that the commercial banks (considered as a system) are able, when making loans on collateral, to expand loans to sixteen times the amount of cash resources at their disposal, just as in the case of loans made on unsecured paper. Whether there are especial dangers connected with such an expansion of credit on the basis of col-

lateral security will be discussed in a following article, which is devoted specifically to the problem of liquidity.

c) *The purchase of bank acceptances.*—Banks also extend credit by the purchase of acceptances of other banks. The accepting bank is willing to accept only if satisfied that the customer on whose behalf the acceptance is made will be in a position to put the bank in funds before the maturity of the acceptance. The analysis required by the accepting bank in such a case is the same as that required when a loan is made. Purchased acceptances, therefore, usually represent an extension of funds for commercial uses, though it is possible that about the same percentage of such extensions goes for fixed capital uses, as in the case of loans to customers. Perhaps, however, the fact that the acceptance business has developed at a time when the Federal Reserve System so strongly emphasizes the need of confining commercial banking to "genuine commercial operations" has resulted in more strictly limiting the use of such funds for commercial purposes.

d) *Investments in bonds and stocks.*—There remain to be considered the investments which banks make directly in securities. This practice has extensively developed in recent times, and our commercial banks now have enormous holdings of securities. It is confined to no particular class of banks, though perhaps some of the commercial banks of the great financial centers have most extensively entered the field of direct investment operations. Such banks as the National City and Guaranty Trust Company of New York, for instance, now hold vast amounts of securities in a wide range of businesses. In 1916 the securities holdings of national banks, including United States bonds, equaled 30 per cent of all the loans and discounts of national banks; exclusive of United States bonds they equaled 20 per cent. For state banks in the same year the percentage of investments in securities and real estate (other than bank premises) to loans and discounts was 21.5 per cent; for trust companies, 46.5 per cent.¹

In the light of the foregoing analysis we may now present some tables which will roughly indicate the degree to which commercial

¹ These figures are based on the *Report of the Comptroller of Currency, 1916, II*: national banks, p. 364; state banks, p. 859; trust companies, p. 885.

TABLE I

INVESTMENT BUSINESS OF NATIONAL BANKS*

LOANS OF COMMERCIAL NATURE

Unsecured by collateral (demand).....	\$ 660,213
Unsecured by collateral (time).....	3,760,225
Discounted acceptances.....	24,500
Total unsecured by collateral.....	\$4,444,938
Secured by merchandise, warehouse receipts, etc. (demand).....	\$ 223,639
Secured by merchandise, warehouse receipts, etc. (time).....	661,338
Total secured.....	\$ 884,977
Total secured and unsecured.....	\$5,329,915
Total genuine commercial loans (unsecured) equal \$4,444,938 minus 20 per cent† of \$4,444,938...	\$3,555,950

LOANS OF INVESTMENT NATURE

I. *Loans:*‡

Secured by stocks and bonds (demand).....	\$1,159,007
Secured by stocks and bonds (time).....	1,029,612
Secured by real estate, mortgages, and other liens on realty.....	160,633
Total investment loans.....	\$2,349,252

II. *Investments:*§

United States bonds.....	\$ 731,205
Other bonds, securities, etc.....	1,527,832
Stocks (not Federal Reserve banks).....	39,272
Total investments.....	\$2,298,309

Total loans of investment nature equal investment loans plus 20 per cent¶ of \$4,444,938. \$3,238,239

Percentage of all loans that are of investment nature equals..... 53.7

Percentage of loans plus investments that are of investment nature equals..... 64.4

* 000 omitted from each amount.

† This estimate that 20 per cent of the non-collateral loans are of an investment nature is derived from the analysis above, p. 648.

‡ Data on loans taken from *Report of Comptroller of Currency, 1916, II, 161*, date of June 30.

§ Data on investments taken from *Report of Comptroller of Currency, 1916, II, 364*, date of June 30.

¶ This addition to investment loans is of course a result of the situation mentioned in note 1.

banks in the United States extend their funds for investment uses.

It is impossible to present a detailed table for either state banks or trust companies because the comptroller's reports do not subdivide loans and discounts.

TABLE II

INVESTMENT BUSINESS OF STATE BANKS¹

Loans and discounts plus overdrafts:		
Commercial ²	\$1,577,433,300	
Investment	1,829,549,334	
		\$3,406,982,634
Investments	\$693,287,159	
Other real estate owned	52,304,090	
Total	\$ 745,591,249	
Investment loans	1,829,549,334	
Total investment business		\$2,575,140,583

Percentage of loans plus investments that are of an investment nature. .62.1

It is to be noted that in Table II it has been assumed that the percentage of loans that are of an investment nature is the same as in the case of the national banks. It is generally known, however, that state banks, subjected to less stringent supervision, have been less inclined to confine loans to genuine commercial uses than the national banks. The foregoing figures, therefore, are too conservative. The investment business of the state banks would probably be between 65 and 70 per cent of the total credit extended.

I am quite aware that these tables are open to question at various points. It may be that my estimate that 20 per cent of the unsecured loans goes for investment commercial uses is somewhat too high. The application of this 20 per cent deduction to the discounted acceptances may also be questioned (but the amount of acceptances at this date is not great), and it is of course true that some of the loans made with collateral as security go for working

¹ The table is for 15,450 state banks. Data taken from the *Report of the Comptroller of Currency, 1916*, II, 859.

² This is assuming that the loans of state banks show the same percentage to be devoted to investment as do those of the national banks, namely, 53.7 per cent.

capital rather than for fixed capital; the tables make no allowance for this. Exact percentages in a problem of this kind are, however, of little consequence. It is enough that we may safely conclude that around 50 per cent of all loans of national and state banks and

TABLE III

INVESTMENT BUSINESS OF TRUST COMPANIES¹

Loans and discounts plus overdrafts:

Commercial ²	\$1,715,123,630
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Investment.....	<u>1,089,244,902</u>
-----------------	----------------------

	\$3,704,368,532
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Investments.....	\$1,605,392,872
------------------	-----------------

Other real estate owned.....	<u>82,329,934</u>
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Total.....	\$1,687,722,806
------------	-----------------

Investment loans.....	<u>1,089,244,902</u>
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Total investment business.....	\$3,676,967,708
--------------------------------	-----------------

Percentage of loans plus investments that are of an investment nature...68.2

trust companies is devoted to investment uses, and that, including direct investments, in the neighborhood of two-thirds of all the credit extended by commercial banks goes for fixed rather than for working capital.

IV. INVESTMENTS IN BONDS AND SECURITIES NOT A MERE TRANSFER OF FUNDS

We must now return for a moment to a consideration of direct investments which commercial banks make in bonds and securities. The significance of the commercial bank in the field of investment can be understood only by a clear recognition that in making investments in securities, just as in the making of loans, the commercial banking system is something more than an intermediary in the transfer of funds from borrowers to lenders. The credit organization which characterizes commercial banking operates quite as much in the making of investments as in the making of loans, and the

¹ The table is for 1,606 loan and trust companies. Data taken from the *Report of the Comptroller of Currency, 1916, II, 885.*

² This is assuming that the loans of trust companies show the same percentage to be devoted to investment as do those of the national banks, namely, 53.7 per cent.

development of the commercial banking structure has thus involved a multiplication of cash resources by sixteen, just as in the previous examples given. That is to say, on the basis of a cash reserve of \$1,000 the commercial banking system has made possible the purchase of \$16,000 worth of securities. It must be emphasized that this multiplication of loanable funds has resulted from the organization of the commercial banks as a whole, and that it cannot be perceived by studying the operations of any individual bank in isolation.

In order to test the correctness of the assumption that the commercial banking system multiplies available cash resources when buying bonds it will be necessary to take some concrete cases of bond purchases and record the changes that occur in the balance sheets of commercial banks. It is of course always necessary to start with an individual bank and then show the changes that result in the accounts of banks in general.

For simplicity we may start with a bank that has a capital of \$100,000 and cash of \$100,000. Investments in building and equipment, loans, and so forth may for simplicity be omitted. Increases or decreases of items on the balance sheet will be indicated by the + or - sign, as the case may be. The initial statement is as follows:

Resources		Liabilities	
Cash.....	\$100,000	Capital stock...	\$100,000

Assume now a purchase of \$10,000 in bonds from A. The statement becomes:

Resources		Liabilities	
Cash.....	\$100,000	Capital stock...	\$100,000
Bonds.....	+10,000	Deposits (A)....	+10,000

This requires explanation. First, is it a fair assumption that the cash will remain at \$100,000? Yes, because the seller of the bonds does not usually wish to withdraw cash; he prefers a checking account. Hence the sale of \$10,000 of bonds to the bank results in a deposit account of \$10,000. Assume now, however, that A draws a check against this deposit account in favor of B; assume further that B deposits the account to his credit in this very bank. It is apparent that the \$10,000 of deposits have merely been transferred from the account of A to the account of B and that the totals

are unchanged. Assume now that B writes a check in favor of C, and that instead of depositing this check in this same bank (X) he deposits it in Bank Y. The result of this is that deposits have been reduced by \$10,000 in Bank X but increased by \$10,000 in Bank Y, thus:

BANK X		BANK Y	
Resources	Liabilities	Resources	Liabilities
Cash... \$100,000	Capital stock.. \$100,000	Due from Bank X +\$10,000	Deposits...+\$10,000
Bonds.. 10,000	Deposits..... -10,000		

Bank Y has a claim against Bank X for \$10,000. When this claim is met will not the cash in Bank X be reduced by \$10,000? The answer is, only on condition that there are no counterbalancing claims of Bank X against Bank Y. In practice this would be contrary to fact—for Bank Y is also making investments in bonds, and checks are being drawn against the resulting deposit accounts which find their way into Bank A—when they can be used to cancel the claims of Bank B. Of course in practice these counterclaims are the result of a variety of banking operations rather than of bond purchases only, but it is necessary for the sake of clear exposition to isolate for the moment the bond transactions.

Assume now that in time Bank X makes additional bond purchases from E, F, G, etc., amounting to a total of \$1,590,000. The balance sheet becomes:

Resources		Liabilities	
Cash.....	\$100,000	Capital stock...	\$100,000
Bonds.....	10,000	Deposits.....	10,000
Bonds.....	+1,590,000	Deposits (E, F, G, etc.).....	+1,590,000

Again, is it a fair assumption that E, F, G, etc., will not withdraw cash? It is certainly exactly as reasonable an assumption as that *commercial* borrowers will not withdraw cash; and the assumption, moreover, corresponds with the facts; checks are of course used quite as commonly in fixed capital operations as in commercial business. Now, E, F, G, etc., draw checks against their respective

deposit accounts, and the receivers of these checks deposit them either in this Bank X or in Bank Y in the same city, or in Bank Z, etc., in other communities. Somewhere in the banking system deposits remain increased by \$1,590,000 as the result of the bond purchases of Bank X. Similar bond purchases are concurrently being made by commercial banks everywhere, and resulting deposit accounts are being created in commercial banks somewhere—deposit accounts which remain permanently augmented so long as checks remain the prevailing means of making payment.

In the illustrations above we have been assuming *no* withdrawals of specie. This checking system, however, is not universal, and cash payments therefore occasionally have to be made. It is for this reason that a cash reserve has to be maintained, and it is for this reason that, with the present organization of the commercial banking system, \$1,600,000 is as far as a bank can go in the purchase of bonds (or in the making of short-time loans) on the basis of a reserve of \$100,000, as seen in the previous paper.¹ The cash reserve of our banking system as a whole is about 6 per cent.

The analysis which we have been making is obviously precisely like that which has frequently been made in explanation of the creation of deposits through the making of loans. Our analysis is correct in so far as the assumption that the seller of the bonds takes a checking account is correct. Granted that he does not withdraw cash, may he not, however, often ask for a bank draft instead of taking a personal checking account, and would not this put a new face on the problem? Specific accounts will again aid us in ascertaining the actual results. Let us assume a purchase of \$10,000 of bonds and payment by a bank draft:

Resources		Liabilities	
Cash.....	\$100,000	Capital stock...	\$100,000
Bonds.....	+10,000		

The balancing item for the bonds, +\$10,000, would be either: Due from banks -\$10,000 on the assets side, or Due to banks +\$10,000 on the liabilities side. That is, the claims of Bank X against its correspondent have been reduced by \$10,000, or the

¹ See *Journal of Political Economy*, XXVI, May, 1918, pp. 497-503.

claims of the correspondent against Bank X have been increased by \$10,000. Assuming that a liability "due to banks" has been increased by \$10,000, let us see if this shortly results in a loss of cash. Will Bank Y present its claim and ask for cash? Certainly not, as a rule, for bankers in relations between themselves are even less likely to require specie payments than business men in their relations with banks. "Cash moves only as a last resort." So long as there are counterclaims arising from similar bond purchases (or from other operations) by the correspondent bank cash payments will not be required.

But what of the seller of the bonds? Does he not cash the bank draft at his own bank? Obviously not, so long as it is more convenient to deposit it and draw checks at pleasure. Suppose the draft is deposited with Bank Y—the correspondent being Bank Z in another city—Bank Y's balance sheet would show:

Resources	Liabilities
Due from banks...+\$10,000	Deposits.....+\$10,000

As in the previous cases the collection of this draft and the payment of the deposit account would involve the use of actual cash only as a last resort.

There is a third way in which the seller of bonds might prefer to be paid, namely, by a cashier's check. This does not, however, change the ultimate situation. Bank X's statement would show:

Resources	Liabilities
Bonds.....+\$10,000	Cashier's checks outstanding.....+\$10,000

When the cashier's check is presented to a bank somewhere it will usually not be cashed but will be entered as a deposit account. Again, all along the line cash will be paid only as a last resort. And in the system as a whole sixteen dollars of bonds may be bought for every dollar of cash reserve.¹

I say sixteen of bonds for every one of cash; but this precise ratio is of course unproved. The analysis in the preceding paper

¹ Whether this expansion of credit has any economic results other than to raise the price level must be discussed at another time.

showed this to be the ratio of the total cash to total loans and investments. So long, however, as the sale of bonds to banks results in the creating of checking accounts that are seldom liquidated there is no apparent reason why the phenomenon should not be quite as true with investments as with short-time loans—unless, indeed, it affects the liquidity of bank assets—and hence the amount of reserve required. Discussion of this possibility must, however, be postponed for the moment. The question of liquidity of bank assets in connection with each of the various forms of credit extension will constitute the subject of the next paper in this series.

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[*To be continued*]

NOTES

WASHINGTON NOTES

OUTCOME OF THE THIRD LIBERTY LOAN

Final figures for the Third Liberty Loan, showing total subscriptions of \$4,170,019,650, or an oversubscription of about 39 per cent, the total number of subscribers being not far from 17,000,000, represent an outcome that far exceeds in success anything that had been expected either by Treasury authorities or by observers of the banking condition of the country. The three successive Liberty Loans afford an interesting progression in matters of public finance. The first, offered at 3 per cent and with very large provisions of exemption from taxation, appears to have been subscribed almost entirely by men of large income, and the subsequent transfers of bonds have tended still more to concentrate the securities of the first loan in the hands of the wealthier class in the community; the second, placed at 4 per cent, was taken by about 9,500,000 subscribers as against 4,500,000 for the first loan, and the facts would indicate that it was absorbed to no inconsiderable extent by people of moderate resources; the third loan, taken by 17,000,000 persons, seems to be not only far more widely distributed than either of its predecessors but also far more evenly absorbed—that is to say, it has been taken in blocks of far more nearly uniform and average size than was true of either the first or second loan.

There are several conditions which have contributed to this progressive change in the distribution of the several loans. In the first place, as the war has advanced and an understanding of it has become more general there has been developed a far better understanding not only of the objects of the war but also of the financial problems and responsibilities involved in it, and now, for the first time, the interest of all classes in the community is becoming thoroughly aroused. Secondly, the changes in the conditions and terms upon which the loans have been issued have decidedly altered the character of their appeal. Finally, a most important feature has been found in the change in methods of taxation which has occurred during the time the loans have been in progress. The present income and excess-profits taxes have necessarily absorbed a

very large share of the current income of persons with large means and investors of this class have been markedly absent during the period when the Third Liberty Loan was being placed. Perhaps the most satisfactory element in the whole situation, however, is the fact—which now appears, from informal reports, to be such—that only a comparatively limited degree of reliance upon banking assistance has been necessary.

So far as the flotation of the loan has thus far gone it is apparent that the smaller purchasers have preferred to draw upon their accumulated funds or savings rather than to rely very largely upon the assistance of their banks. Larger subscribers have, as usual, to some extent anticipated their future income for the purpose of increasing their subscriptions to bonds, but, partly due to the relatively less important share of the loan taken by these larger subscribers, such assistance has been kept to very moderate proportions. It is never possible to state in exact terms the effect of a great public loan upon the banking position until time has elapsed sufficient to permit the permanent absorption of the bonds. Some careful observers believe that the next few weeks will see a certain increase in applications for rediscounts at Federal Reserve banks, protected by government obligations, the proceeds to be used in enabling the member banks to provide for renewals or new loans necessitated by the wants of those who are engaged in the process of absorbing and carrying the government securities. This may or may not prove to be the case, but even should it be so, there is no reason at this time to believe that the demand thus exerted will be more than temporary or will exceed very moderate proportions. Unless the government's requirements should be increased much beyond the average figures of the past year the experience of the Third Liberty Loan would furnish good reason for believing that they could be met by the present methods of financing.

CALL FOR NEW TAXATION

The indicated prospect, however, is that the demands to be met during the coming year will be much larger than had been indicated during the past year. Secretary Baker's estimate that expenditures in connection with the placing of an adequate army in France may possibly run to \$15,000,000,000 has largely changed the basis of computation. Assuming that some \$3,000,000,000 or \$4,000,000,000 are obtained from income and excess-profits taxes, and that Liberty Loans can be successfully floated in about the same proportion as during the past year (a total of \$10,000,000,000 in round numbers), there would still remain a requirement of several billions to fill the gap due to the new estimates of

army and navy costs. As a result of this situation government officers are now looking to the possibilities of new taxation, but they find that excess-profits taxes have already been carried to the point of apparent maximum yield and that the taxes on the higher incomes can probably be increased but little from the standpoint of productiveness.

The higher middle-class incomes are already bearing a rather heavy burden, so that the natural conclusion has been tentatively in favor of increasing the rates of the normal tax and providing for a system of consumption taxes. Proposals to this effect are now before Congress, with the recommendation that they shall be acted upon at the current session. The question raised by such a suggestion is whether or not the extension of the system of taxation along the lines suggested will or will not actually result in bringing in a larger gross income to the government, or whether it will not result in somewhat reducing the yield. The experience of the Third Liberty Loan shows that the higher income recipients have in part discontinued their subscriptions because of the increasing burden of income and excess-profits taxes.

If the tax burden should now be carried on down into the lower ranges of income it would probably have the same effect upon bond subscribers in these income levels as has already been exerted in the higher ones. The truth is that the government is now taking, either through loans or taxation, practically the whole of the savings margin of the community, and that the only way of increasing the amount it can get is through increasing either the total product of industry or the amount of it that is saved. Some increases in productiveness may be possible, although they must of course contend with the steady drain of labor into the fighting forces. Savings can undoubtedly be largely increased and must be if greater outlay on war is to be provided for. The raising of funds through any other means would imply nothing more than inflation of credit and the raising of prices, processes neither of which would be of the slightest advantage to the government and would be of immense disadvantage and injury to the public. The problem of government financing is thus not, as was erroneously supposed by a large number of economists at the beginning of war, a choice between loans and taxation as methods of getting government revenue, but a problem of encouraging the development of a surplus of wealth that can be made available by either means for government purposes. There is grave danger that, in the new taxation plans, this point might be lost sight of and a mere theoretical preference for taxation be allowed to counterbalance a need for larger income.

THE "INFLATION" SITUATION

The continued high prices and the apparent tendency of prices to advance to still higher levels have brought about a more active discussion of the theory of prices and conditions tending to raise them than has existed at any time within perhaps twenty-five years. Foremost in this discussion is the question whether "inflation" is or is not the result of the operation of the Federal Reserve System, and if so in precisely what way. Much of the current discussion has apparently been based upon vague or indefinite ideas of the meaning of "inflation," but there is now considerable evidence that a more general consensus of opinion and agreement as to definitions is in sight.

"Inflation," in the sense in which the term is now being used by the more careful writers on the subject, is taken to signify the increase of bank credits not represented by any immediate addition to current wealth. Thus, for example, if the government borrows by an issue of bonds, such bonds being taken by the banks and payment for them made in the form of bank credit which is at once transferred to individuals who have furnished labor or supplies, it is evident that there has been a net addition to the purchasing power of the community not represented by any corresponding addition to wealth, whether of a salable or available form or otherwise. Here there is an "inflation" or exaggeration of, or addition to, the actual purchasing power of the community as compared or contrasted with the amount of goods in existence. From this point of view the measure of "inflation" is afforded by the total new holdings of bonds in banks which have become the basis for credits on the books of such banks, used or applied to the purchase of goods and services. Particularly is this true in those cases where the purchasing power so used takes a form which is available as "reserve" against other credits to be granted by the banks. Thus, for example, if the banks which purchased bonds in the illustration already given at once rediscount their own notes secured or protected by these bonds, at Federal Reserve banks, they thereby obtain a credit on the books of Federal Reserve banks which will sustain, theoretically at least, several times its own amount in the form of credits on the books of the banks which have been granted the rediscount. This means that the credit so granted may serve several times as a medium of purchasing power employed in gaining control of goods and services. In so far as paper secured by government bonds has been discounted on a semi-permanent or renewal basis, the Federal Reserve System may thus be regarded as serving as a means of "inflation." The same would be true of any banking system

which was placed in a position requiring the conversion of long-term obligations into immediate means of purchase.

Out of the same discussion has grown up a much clearer understanding, also, of the relation between loans and taxation. At the opening of the war there was a distinct tendency in many quarters to regard the effect of loans and taxation as distinctly different from one another. It is now apparently quite generally admitted that this is a distinction without a difference, and that the whole question between loans and taxation depends upon whether the funds furnished in either case are likely to be the result of saving or of bank borrowing. Taxes paid by a contributor from the proceeds of loans obtained by him would be an agency in "inflation," whereas a government bond sold to an investor who purchased it from funds saved out of his current income would not be. This modified view of the case largely does away with the cruder theories expressed early in the war and based upon the view that taxation practically always tended to keep down prices while loans in a similar way tended to advance them. Experience is showing that there is no basis for any such view, and the prevailing view of the general problem is being modified accordingly, as just indicated.

BOOK REVIEWS AND NOTICES

The Danish West Indies under Company Rule (1671-1754). With a Supplementary Chapter, 1755-1917, by WALDEMAR WESTERGAARD, PH.D., and an Introduction by H. MORSE STEPHENS. New York: Macmillan, 1917. Pp. xxiv+359. \$2.50.

This volume is a substantial and scholarly contribution to our knowledge of the part played by commercial companies in European expansion as well as to the history of commerce and settlement on the islands of the Caribbean Sea. Lured by the mines, Spaniards neglected their insular possessions, with the result that almost every great European power ultimately gained a foothold on one or more of the West India Islands. Though less favorable for settlement, these tropic isles were long esteemed of far more commercial value than colonies in the temperate zone. Their productions did not compete with but supplemented those of the mother-country, their environment was unfavorable for the rise of rival manufactures, and they tended to drain Europe but slightly of man power. Moreover, their settlement with Africans identified West India colonization with one of the most lucrative commercial activities of the seventeenth and eighteenth centuries—the slave trade. The European occupation of the West Indies was, in fact, but one phase of a three-cornered commerce involving exports from Europe to the Guinea Coast, cargoes of slaves thence to the West Indies, and shipments of sugar from the latter to Europe—altogether a powerful stimulant to manufacturing, shipbuilding, breeding of seamen, and naval strength. Such was the alluring enterprise the realities of which the colonial powers were seeking to demonstrate through chartered commercial companies.

From the viking age Denmark had a more or less continuous interest in westward exploration and settlement, interrupted by the Black Death, but revitalized in the search for a northwest passage in the early seventeenth century. It was a Dutchman, John de Willom, however, who in 1625 proposed a Danish West India company. But wars delayed matters, and it was not until 1654 that a ship from Elsinore ventured to the West Indies. Others followed. In 1659 a Danish African company with factories on the Guinea Coast began the slave trade with Spanish America. Denmark's international relations, constantly borne in mind by the author, explain many vicissitudes of her colonial commerce.

Thus, in 1670, being an ally of England, she shared the latter's security from attack by Spain in the West Indies. The Danish West India Company, chartered in 1670 and resembling in many respects the British Hudson Bay Company, secured a monopoly of the trade and government of the unoccupied island of St. Thomas, which it settled in 1671 with one hundred and sixteen indentured servants and sixty-one convicts. At first there was great mortality, and convicts made wretched settlers. Sugar canes were obtained from the English at Tortola, many Dutch planters came in, and the Danish African Company was absorbed by the West India Company, thus solving the labor problem with slavery. By 1680 forty-six plantations were settled, the company cultivating two of its own.

In the critical years 1680-90 St. Thomas was frequented by buccaneers whom Danish officials often welcomed; Captain Kidd himself disposed of some of his loot there in 1699. Progress toward sober trade and settlement was slow. In 1685 the Brandenburg Guinea Company and the Danish Company agreed to a joint occupancy of St. Thomas for thirty years. The prime interest of the Brandenburgers, already in possession of an African post, was to secure a West India factory accessible to the colonies of Spain, England, and France. Denmark hoped to obtain German settlers as well as a share in the profits of the slave trade. But friction ensued, the Danes on one occasion breaking into the German warehouses to recover rent, and, in spite of their designs on Crab Island, Tobago, Tortola, and St. Eustatius, few Germans settled in the West Indies. In 1695 the German factory at St. Thomas was looted by the French; in the financial depression that followed, the agreement with the Danes expired and the Germans wound up their business both in Africa and the West Indies at a considerable loss. Frederick William I declared the whole enterprise misdirected energy and capital. Even at that period there is evidence that the Germans had little capacity in dealing with primitive peoples.

It was not until the administration of Governor Lorentz that St. Thomas entered upon a period of economic and social stability. Danish neutrality in the long wars ending in the Peace of Utrecht made that island an active center of trade for the belligerents, England, France, and Spain. Such in fact was the rôle played by the Danes in all colonial wars of the eighteenth century. In time of peace, also, when international trade was prohibited by mercantilist regulations, the Danish West Indies like the Dutch served as a distributing center for an enormous amount of illicit trade. Gradually the company and, after 1754, the royal authority relaxed all restrictions on trade with outsiders until

commerce at St. Thomas and St. John became entirely free in 1815, and that of St. Croix partially in 1823 and entirely in 1833. St. John was first occupied in 1719 and St. Croix was acquired from the French in 1733.

From 1754 to the present, a period which the author plans to cover in two more volumes, a brief but valuable summary is given of such important matters as the prohibition of the slave trade and slavery, the cosmopolitanism of the islands, the liberalization of commercial policy, the rise and decline of St. Thomas as an *entrepôt*, its importance as a coaling and naval station, the decay of sugar and the increase of cotton culture, the general depression of recent years, and the negotiations culminating in annexation to the United States.

The bibliography of twenty pages is admirable. The chief depositories of manuscripts are the Danish state archives, including the entire official records of the West India and Guinea companies, the company records kept at Copenhagen, the Copenhagen municipal archives, the Royal Library at Copenhagen, and the Bancroft collection at Berkeley, California, containing orders by governors of St. Thomas, planters' correspondence, and letter-books of Philip Gardelin, Governor Moth, and Christian Schweder. Particularly useful manuscripts are those by Martfeldt, an economist who visited the islands about 1765-68, and an account of the company by Mariager, who for over thirty years was in its employ and intimately acquainted with its affairs. From printed sources the author has drawn especially from Schück's *Brandenburg-Preussens Kolonial-Politik*. Among secondary writers Høst (1791) attempted the first chronological history of the Danish West Indies, Isert's travels to Guinea and the Caribbean (1788) are valuable for the slave trade, Knox's *Historical Account of St. Thomas* (New York, 1852) has been practically the only available book in English, Krarup's *Iversen* (1891) and *Milan* (1894) are accurate and exhaustive studies of the first and fourth governors, and Oldendorp's history of the Moravian mission in the Danish West Indies (1777) is still the best account of that subject. J. A. Friderica and Edvard Holm among modern scholars have written with care on the East and West India companies.

Appendixes of sixty-four pages contain manuscript data of considerable importance to the antiquarian and economic historian, including lists of governors, directors, and shareholders of the company, the company's charters of 1671 and 1697, correspondence, and statistical tables on population, plantations, slave cargoes, prices of sugar and cotton, exports of sugar from Copenhagen, receipts and debts of the company, its invested capital and returns, and various phases of its business in sugar and cotton.

Altogether the work has been done with accuracy, extensive acquaintance with the sources to 1754, adequate knowledge of the European background, and a sensible appreciation of the significant rôle these tiny but strategically situated islands have played in the commerce and, as neutrals, in the wars of Colonial America, and of the naval worth, as Admiral Mahan predicted, they are likely to possess in the future.

In places perhaps the book would have gained in clearness and value had the author pursued less the method of general chronological narrative and had organized his data more completely according to well-defined subjects. An economic and social analysis of West India society can be accomplished, however, only after more studies of the type of Dr. Westergaard's enable us to make comparisons of the various national groups in the West Indies. When the facts of West India development are fully revealed and understood we shall be in a far better position to appreciate the economic as well as the political and diplomatic history of America.

FRANK W. PITMAN

YALE UNIVERSITY

The Fetishism of Liberty. By HARRY WATON. New York: Marxian Philosophical Society, 1917. Pp. vii+101.

Is not your iconoclast at bottom a devout worshiper? A Marxian socialist declares liberty to be "one of the most dangerous idols worshiped by the people of this century," and thereupon justifies his faith in socialism because it is in harmony with that tendency of the cosmic process of evolution—universal freedom. As the patron saint sought to destroy the fetishism of commodities and humanize them, the humble follower attacks the fetishism of liberty and seeks to socialize it. Both are worshipers of capitalism and liberty still.

We start with the familiar conflict between the individual or group with inherited anti-social impulses and society with its legal and customary restraints. The socialist outdoes Spencer here. Then comes the happy ending, where the individual is completely socialized and conflict is no more. This is true to Marxian prophecy, "We feel in a state of liberty when we can gratify our needs and desires." The individual is not and cannot be free until he seeks the social good. The tendency of social evolution is toward a state of ever-increasing constraint of the anti-social impulses of the individual. Hence, only as we seek the satisfaction of our social nature do we find freedom and happiness. Fortunately the conditions of life make for pro-sociality and individual well-being at the same time.

The essay has certain faults. It abounds in contradictions, perhaps because terms are loosely used; the thread of the argument does not unroll singly and continuously; and generalizations are not always supported by data. And yet there is such sound truth in its emphasis upon the true uses of liberty and the opportunity to satisfy one's social needs and desires that all else may be forgotten.

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The World's Coal Situation during the War. II

William Notz 673

Commercial Banking and Capital Formation. III

H. G. Moulton 705

Notes

732

Our Trade Balance and Our Foreign Loans

Abraham Berglund 732

Washington Notes:

743

Free Use of Collection System—Treasury Financing for 1918—New
Taxation—Railroad Rates and Wages—Control of Foreign Exchange

Book Reviews and Notices

752

VEBLEN'S *The Nature of Peace and the Terms of Its Perpetuation* (George H. Mead), 752.
—HOXIE'S *Trade Unionism in the United States* (Ordway Tead), 762.

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THE WORLD'S COAL SITUATION DURING THE WAR. II

IX. THE UNITED STATES

THE DEVELOPMENT OF GOVERNMENT CONTROL

The effect of the European war on the coal situation in the United States became noticeable more generally during the latter part of the summer of 1916, when a greatly increased demand by war industries for coal, local coal shortage, traffic congestion, and panic prices focused public attention upon the abnormal conditions which had developed in the coal trade. The gradual dislocation of the nation's industrial life reflected itself first in the anthracite trade and was followed by similar developments, only on a much larger scale, in the bituminous-coal industry.

Fully a half-year before the coal situation reached a crisis widespread public dissatisfaction had been occasioned by price increases made by anthracite operators in the beginning of the year 1916. These price increases were attributed by the operators in part to increased cost of supplies, deeper mining, and the Pennsylvania workmen's compensation act and tonnage tax, but principally to a wage increase under the new wage agreement of May 5, 1916, which provided for an increase of about 7 per cent over the 1912 rate. The view current among the public, that the increases in the

price of anthracite coal were unwarranted, was voiced by a resolution of the United States Senate, the so-called Hitchcock Resolution of June 22, 1916. In that resolution the Federal Trade Commission was requested "to investigate and report on the recent increase in the price of anthracite coal and on the relation between the cost of labor and the price of anthracite coal prior to said increase and at the present time." In pursuance to this resolution the Federal Trade Commission during the fall and winter of 1916-17 made an investigation of the production, distribution, and prices of anthracite coal in the principal producing and consuming centers.

On April 30, 1917, the United States Senate adopted a further resolution calling upon the Federal Trade Commission to report at the earliest possible moment all information relative to the anthracite-coal industry, including the production and cost of mining anthracite coal and the disposition of the anthracite-coal supply during 1916 and 1917 as compared with previous years. After investigation the Federal Trade Commission reported to Congress on June 20, 1917, that the panic prices which had prevailed in the fall and winter of 1916-17 were caused chiefly by local coal shortages in consuming markets, with resulting buying panics. It was shown that the actual market shortage for the entire coal year 1915-16 was in fact 4 per cent greater than the average anthracite supply marketed for the three preceding years. Congestion of railroad traffic, frequent embargoes, and a shifting of markets resulting from the Erie Railroad diverting to the West a large tonnage normally sold in the East had seriously interfered with the distribution of coal and had contributed to bring about conditions from which a panic demand developed.

Regarding the price of anthracite at the mines, the Commission found that while the so-called railroad coal companies had slightly increased their basic circular prices during the crisis, many independent operators had taken advantage of market conditions to charge exorbitant profits, price increases ranging from \$1.00 to \$3.00 and even \$5.00 a ton. The speculative transactions of jobbers formed the most striking feature of the panic market. The majority had averaged double or treble their normal gross margins of profit, and some five or six times their normal margin.

With respect to the retail coal market, conditions differed. Generally speaking a number of dealers in Chicago, Massachusetts, and Rhode Island had increased their gross margins by as much as \$1.50 or \$1.75 per net ton over their normal margin. Others in New York City, Detroit, and Boston took less marked advantage of the crisis, and still others in Minneapolis, St. Paul, Milwaukee, and Buffalo did not unduly raise their prices.

The Commission further found that in the case of the coal-operating companies whose books had been audited the increase in prices was not justified by the increase in cost.

In the bituminous-coal industry developments have been somewhat different. In a paper read at the sixth annual meeting of the International Railway Fuel Association at Chicago in May, 1914, Mr. C. G. Hall in discussing the conditions prevailing at that time said:

The deplorable condition of the bituminous-coal industry has been emphasized by the coal operators in all conventions and meetings in which they have participated during the past eighteen months. Remedies have been proposed, discussed, and abandoned as impracticable or unlawful. It has even been proposed in conventions of national scope that Congress be petitioned for an appropriation to put the bituminous-coal industry on its feet financially. The physical producing capacity of the bituminous mines of this country is far in excess of the amount of coal consumed.

Conditions like those described in the foregoing prompted the House of Representatives to pass the so-called Rainey Resolution on August 18, 1916.¹ This resolution, after calling attention to alleged unfair methods of competition, the unsound financial condition, wasteful mining methods, and unsatisfactory labor situation, directed the Federal Trade Commission to investigate the bituminous-coal industry immediately. On May 19, 1917, the Federal Trade Commission reported² to the House of Representatives that in its opinion the coal industry was being paralyzed by the failure of transportation, which curtailed production and gave rise to a wildly fluctuating market in which speculation fed upon panic. The Commission recommended in substance (1) that the

¹ H. R. 352, Sixty-fourth Congress, First Session.

² *Report of the Federal Trade Commission on Anthracite and Bituminous Coal*, 1917, p. 18.

production and distribution of coal and coke be conducted through a pool in the hands of a government agency; that the producers of various grades of fuel be paid their full cost of production plus a uniform profit per ton; (2) that the transportation agencies of the United States, both rail and water, be similarly pooled and operated on government account under the direction of the president and that all such means of transportation be operated as a unit.

But during the course of the investigation the bituminous-coal situation changed completely, and conditions developed in the anthracite industry very similar to those outlined above. Prices had reached unprecedented levels; traffic congestion, demurrage abuses, numerous embargoes, and priority-shipment orders made the situation worse. Complaints increased that agreements to deliver coal at contract prices were broken, many shippers selling their coal in the open market for as much as the market would stand.

In the anthracite trade conditions were at this time somewhat better, due to the fact that the Federal Trade Commission was exercising a certain degree of supervision over prices by publishing bulletins from time to time on anthracite-coal prices at the mines, gross margins of retailers, and anthracite market conditions generally.¹ By publicity of this kind and with the aid of sheer force of public opinion, which was becoming thoroughly aroused, anthracite prices on the whole remained stabilized.

In order to stabilize bituminous-coal prices, which were running wild, Mr. F. S. Peabody, who, in April, 1917, was appointed chairman of the Committee on Coal Production of the Council of National Defense, called a conference of bituminous-coal operators east of the Mississippi to meet at Washington on June 28, 1917. At this conference, which was attended by from 350 to 400 coal operators, also Secretary of the Interior Lane, and Commissioner Fort of the Federal Trade Commission, a voluntary agreement was made to abide by certain maximum prices for coal sold at the mines. The prices agreed upon were to become effective July 1, 1917. The maximum jobber's commission was fixed at 25 cents per net ton.

¹ See *Interim Report of the Federal Trade Commission to the Senate of the United States on Anthracite Prices*, May 4, 1917.

While the prices agreed upon at this conference, the so-called "Peabody-Lane prices," represented substantial reductions as compared with the range of prices quoted in the open market at that time, public opinion generally seemed to take the view that they were too high. Besides, complaints soon began to increase that many operators failed to abide by the agreement, and the Committee on Coal Production began to make public lists of such violators. Finally, Secretary of War Baker, of the Council of National Defense, issued a statement disapproving of these prices,¹ and the agreement was presently disregarded altogether.

In the meantime Congress had taken the national coal situation under consideration² and passed the so-called Lever Act ("An Act to provide further for the national security and defense by encouraging the production, conserving the supply, and controlling the distribution of food products and fuel"), which was approved on August 10, 1917.³ The act provided in substance as follows:

The President of the United States shall be empowered, whenever in his judgment necessary for the efficient prosecution of the war, to fix the price of coal and coke, wherever and whenever sold, either by producer or dealer, to establish rules for the regulation of and to regulate the method of production, sale, shipment, distribution, apportionment, or storage thereof among dealers and consumers, domestic or foreign; said authority may be exercised by him in each case through the agency of the Federal Trade Commission during the war or for such part of said time as in his judgment may be necessary.

In case a producer or dealer fails to conform to such prices or regulations or to conduct his business efficiently under the regulations or in a manner prejudicial to the public interest, the President is authorized to requisition the plant and business and operate the same through such agency as he may direct, the owner being paid a just compensation. If in the opinion of the President it shall be necessary, he is authorized to require coal producers to sell their products only to the United States through an agency to be

¹ Hearings before the Subcommittee of the Committee on Manufactures, United States Senate, p. 450.

² Hearings before the Committee on Interstate Commerce, United States Senate, Sixty-fifth Congress, First Session, June 22-26, 1917, Parts I and II.

³ Public Act No. 41, Sixty-fifth Congress.

designated by him, such agency to regulate the methods of production, shipment, distribution, apportionment, or storage among dealers and consumers, and to make payment of the purchase price to the producers. The Federal Trade Commission was instructed to determine the reasonableness of profits and cost of production necessary to establish the purchase price.

With regard to the fixing of maximum prices for coal and coke section 25 provides that the Federal Trade Commission is to make inquiry into the cost of production and shall have access at all times to the books and records of all mine operators or other persons where coal and coke may become subject to this section. The Commission shall fix and publish maximum prices for both producers and dealers, allowing the cost of production, including the expense of operation, maintenance, depreciation, and depletion, and adding thereto a just and reasonable profit. The maximum prices so fixed shall not be construed as invalidating any contract in which prices are fixed, made in good faith, prior to the establishment of maximum prices.

A penalty clause provides for a fine not to exceed \$5,000, or imprisonment for not more than two years, or both, in case of conviction for violation of this law.

The passage of the Lever law by Congress marked an important turning-point in the coal situation of the United States. With the enactment of that law federal regulation of the coal industry for the period of the war was initiated, and on August 23, 1917, the President appointed Harry A. Garfield, president of Williams College, United States Fuel Administrator. Dr. Garfield immediately organized the United States Fuel Administration, with headquarters at Washington, D.C., and appointed state fuel administrators for the different states. On May 3, 1918, Mr. Cyrus Garnsey, Jr., was appointed Assistant United States Fuel Administrator. The main divisions of the United States Fuel Administration are the following: Administrative, Conservation, Distribution, Legal, Oil, Education, and State Organization.¹

¹ The Federal Trade Commission has performed certain work relating to the coal industry in co-operation with the United States Fuel Administration.

PRODUCTION

The most encouraging feature of the war-time coal situation in the United States is the fact that the production of coal, both anthracite and bituminous, has steadily increased since 1914. In all the other leading coal-producing countries of the world the production of coal has declined during the war. Notwithstanding the fact that the producing capacity of the coal mines has been seriously interfered with by labor shortage, increased costs, and scarcity of supplies, and above all by the breakdown in the transportation facilities of the railroads, the total output of the country's coal mines has increased as follows:

Year	Anthracite	Bituminous	Total
1913.....	91,524,922	478,435,297	569,960,219
1914.....	90,821,507	422,703,970	513,525,477
1915.....	88,995,061	442,624,426	531,619,487
1916.....	75,461,527	502,518,545	577,980,072
1917.....	86,389,101	544,261,581	630,650,682

It is of note that the increase is in the production of bituminous coal, the production of anthracite having decreased.

The production in tons of bituminous and anthracite coal during the first four months of 1918, as compared with the first four months of 1917, was as follows:

Months	Anthracite		Bituminous	
	1918	1917	1918	1917
January.....	5,638,383		42,727,000	
February.....	5,812,082		43,557,000	
March.....	7,276,777		48,188,000	
April.....	6,363,375		46,949,000	
Total.....	25,095,615	23,700,531	181,421,000 *	176,582,648

* Estimated.

The increased demand for coal and the accompanying high prices have resulted in a large increase in the number of coal operations. According to the United States Geological Survey there

were 19,107 coal operations in the United States in 1915, of which 3,762 produced 3,000 tons or more each per year, 511 produced from 500 to 3,000 tons each, and 14,834 produced less than 500 tons each. During 1916 and 1917 many new mines have been opened, old and abandoned mines have again been put into operation, while hundreds of stripping operations and wagon mines (that is, mines which have no railroad connection, the coal being hauled by wagon from the mine to the nearest railroad shipping point) have been opened. Data compiled from the *Coal Trade Journal* show that from April, 1917, to April, 1918, 490 new coal-mining concerns were incorporated in the United States with a total capital of \$53,086,500.

The question of whether or not the indiscriminate opening up of new coal mines should be allowed has been widely discussed both in this country and abroad. In several European countries restrictive legislation has been enacted restricting new development work in coal mines, in order to avoid waste of labor and to increase the producing capacity of present operations. In this country there has been much complaint to the effect that the numerous small wagon mines with inadequate loading facilities detain coal cars for long periods and materially increase the car shortage at the large and efficiently operated mines. A statement of the United States Fuel Administration of May 23, 1918, relative to the opening of new coal mines announces that no new coal mines are to be opened in the future until the Fuel Administration has approved an application which must be made by the prospective operator, and until the Railroad Administration has recommended such application.

Since the coal shortage in the winter of 1916-17 efforts have been made to increase the production of coal. By liberal wage-increase allowances to miners and fair margins of profits to coal operators the production of coal has been stimulated and increased in a measure which greatly exceeds the results of similar efforts in other coal-producing countries of the world. In the early part of 1918 the work of stimulating the production of anthracite, of cataloguing the requirements of the government and the public, and of apportioning the supply among the various states and the amount thereof to be furnished by the several producers was placed in the

hands of a special Anthracite Committee by the United States Fuel Administration. This committee, which is subject to the direction of the United States Fuel Administrator, is also to advise the Director General of Railroads as to the routing and distribution of the coal from the time it leaves the mines until delivered in the various states and communities.¹

While the efforts to speed up and to increase the production of coal have been very successful, they have at the same time resulted in large quantities of poorly prepared coal being shipped from the mines. Widespread complaints developed on account of the large percentage of slate, shale, and dirt contained in the coal shipped to market. To prevent the shipment of dirty coal the United States Fuel Administration by an order of March 18, 1918, allowed a bonus of 20 cents per ton extra for coal prepared or washed according to prescribed regulations. Another order, effective June 1, 1918, prohibits the sale, shipment, or distribution of coal which on account of its content of impurities would not have been considered merchantable prior to January 1, 1916. In case of violation, 50 cents per ton from the government price may be deducted if the coal has been loaded into cars or bins. Inspectors appointed by district representatives of the Fuel Administration are to enforce the order.

The production of coke has increased from 34,555,914 net tons in 1914 to approximately 56,600,000 tons in 1917. Maximum prices for coke were fixed by the United States Fuel Administrator on November 9, 1917, with subsequent revisions. One of the most significant features in the industrial history of the United States is the remarkable growth of the by-product coke industry in the past four years. With the advent of the war this country began to realize the economic necessity of making itself independent of foreign countries for its supply of coal-tar products; entirely new industries were created, and a solid foundation was laid for a large and promising expansion and utilization of our coal resources in the future.

The great demand for fuel material of all kinds has also served as a strong stimulus to increase the production of fuel briquettes.

¹ Anthracite Committee, *Circular No. 1*, March 12, 1918.

In 1916 the output of fuel briquettes in the United States amounted to 295,155 net tons; in 1917 to 406,856 net tons, or an increase of 38 per cent.

TRANSPORTATION

The question of transportation and car supply at the mines has been perhaps the most difficult war-time problem with which the coal industry has had to cope, and nowhere does this problem involve such enormous difficulties as in the United States. Traffic congestion caused by the extraordinary demands made upon the railroads by war industries, troop movements, etc., has time and again paralyzed the transportation of coal from the mines to the consuming markets. Conditions have been most serious at important railroad gateways and terminals like Cincinnati, Chicago, and New York. The great movement of freight to the Atlantic seaboard with insufficient vessels to remove the freight—docks and warehouses being filled and railroad cars left standing in the yards and on sidetracks—finally brought on such an acute state of affairs during the winter of 1917-18 that the United States Fuel Administrator issued his famous "closing" order, on January 17, 1918, providing for five fuelless days from January 18 to 22 and on every Monday, beginning January 28, 1918, and continuing up to and including March 25, 1918.

The slow movement of coal cars in transit and delays in returning empty cars to the mines, due in part to the general congestion of traffic prevailing throughout the country, brought on what is generally considered the most serious phase of the coal situation, viz., car shortage at the mines. This one factor has done more than all other causes combined to keep down coal production. In most of the coal fields of the country coal mines have been forced to close down for shorter or longer periods, while others have been running on short time, in both cases involving a decreased production.¹ This state of affairs began to develop in the fall of 1916 and has continued to become more serious since then.

¹ According to data compiled by the Southern Ohio Coal Exchange (see Hearings before the Subcommittee of the Committee on Manufactures, United States Senate, Sixty-fifth Congress, Second Session, January 9, 1918, p. 367), the full-time output lost from October 29 to December 22, 1917, on account of car shortage by coal operators who are members of that association amounted to 562,889 net tons out of a full-time capacity of 1,608,942 net tons.

A statement given out by the National Coal Association¹ gives the following figures to show the loss in production of bituminous coal on account of car shortage for the period from January 1 to March 1, 1918, the figures being based on official returns of the United States Geological Survey up to February 9, and upon conservative estimates for the remainder of February.

Week Ending	Lost Tonnage
January 5.....	2,321,540
" 12.....	3,874,818
" 19.....	5,449,695
" 26.....	4,064,448
February 2.....	4,569,366
" 9.....	4,348,986
" 16.....	3,500,000
" 23.....	2,000,000
Four days to March 1.....	1,000,000
Total.....	31,128,000

Vice-president F. S. Landstreet of the Consolidation Coal Company, the second largest coal-producing company in the United States, mining on an average 14,000,000 tons of bituminous coal annually, recently made the following statement² regarding coal-car shortage:

Our records show that for the last six months there has been approximately only 60 per cent of railroad cars furnished that the miners employed were capable of loading. It further shows that an average of 6,500 miners has been idle during that period. While the same men were not idle continuously during that period there was an average of that many idle every day.

As this company produces a little over 2½ per cent of the entire production, and as the conditions shown by this company are typical of the conditions prevailing in the entire bituminous region, it is easy to see that there has been at least an average of 100,000 miners idle every day for six months.³

¹ *The Daily Digest of the National Coal Association*, February 28, 1918.

² *Coal Mining Review*, February 1, 1918, p. 12.

³ According to returns received in answer to a questionnaire sent by John L. Lewis of the United Mine Workers of America to 2,700 local unions, seeking information relative to all idle days due to car shortage from December, 1916, to November 1, 1917, the idle days during that period caused a reduction of 50,000,000 tons production (*Coal Trade Bulletin*, January 1918, p. 22).

THE PROBLEM OF DISTRIBUTION

In addition to keeping down the production at the mines the inadequacy of railway facilities has seriously interfered with the distribution of coal from the coal fields to the consuming markets. This was the case particularly with New England and the North Central states which get their coal supply from the coal docks along Lakes Superior and Michigan.

During the season of 1916 the coal shipments from the lower lake ports, Buffalo, Erie, Cleveland, etc., to the docks of the head of the Great Lakes, Superior, Duluth, Milwaukee, Chicago, etc., fell off, while the demand for coal for industrial purposes greatly increased. Formerly at the beginning of each coal season a considerable stock of coal remained on hand at the docks from the previous year. But at the opening of the lake season in 1917 these stocks had been practically depleted and prospects of an imminent coal shortage for the following winter had to be reckoned with. To avert such a calamity Judge Lovett, at that time United States Director of Priority Shipments, issued Priority Order No. 1 on August 23, which gave priority to bituminous-coal shipments from the lower lake ports to the lake docks in the Northwest.¹ As a result of this order the lake coal shipments which passed through the Soo canals (American and Canadian) during the season of 1917 showed an increase of 13.6 per cent over the previous year. The following table shows the shipments in tons of anthracite and bituminous coal through the Soo canals during the years 1916 and 1917.

	1916	1917
Anthracite.....	2,210,219	2,562,199
Bituminous.....	13,912,900	15,736,654
Total.....	16,123,119	18,298,853

In the Eastern states a greatly increased demand for war industrial purposes and a heavy increase in the population of manufacturing centers brought on more or less acute coal shortages during the winters of 1916-17 and 1917-18. According to a report by the Provost Marshall General to the Secretary of War in connection with the selective-service act of 1917, the population of the eastern

¹ *The Coal Dealer*, February, 1918, p. 50.

industrial region, comprising the states of New York, Pennsylvania, New Jersey, Maryland, District of Columbia, Delaware, Massachusetts, and New Hampshire, increased during the past seven years by approximately five millions, or 15 per cent. The greatest shortage of anthracite for household consumption was experienced in New England. Formerly that section got the bulk of its coal supply by water, but the taking over of a large number of vessels by the government for war purposes greatly reduced the facilities for coastwise coal shipments. On October 27, 1917, the United States Fuel Administrator authorized the fuel administrator of New England to obtain and supply coal in limited quantities to meet cases of immediate and pressing exigency and to authorize special sales at wholesale to insure continued operation of public utilities, essential industrial plants, and for other purposes. In January, 1918, the coal shortage in New England assumed such an alarming aspect that on January 3 the United States Fuel Administrator issued a general priority order to certain coal mines directing them to consign a certain number of cars of coal per day to the fuel administrator of New England who was to direct the resale and distribution of the same.

Table I indicates the distribution of anthracite coal during the year of 1916-17 by states grouped in sections, as well as the allotments for railroad supply, shipments to Canada, miscellaneous exports, and allotments for army and navy camps and cantonments, as published by the Anthracite Committee of the United States Fuel Administration.¹ The table also shows the proposed allotment of anthracite for the year 1918-19 and the present increase and decrease for the two years.

It is significant to note that the distribution to New England and the Atlantic states will be materially increased, while the supply to other sections of the country will be curtailed by 2,202,288 tons. The trans-Mississippi states Missouri, Kansas, Nebraska, and Iowa will not receive any anthracite coal.

The plan outlined in Table I constitutes the first systematic effort to regulate the distribution of anthracite coal in the anthracite-consuming territory. The fact that with the exception

¹ *The Daily Digest of the National Coal Association*, May 29, 1918, p. 6.

of a very small tonnage of anthracite coal received in Arkansas and in New Mexico all of our anthracite-coal supply comes from a very limited area, comprising 550 square miles in eight counties of northeastern Pennsylvania, makes the distribution of anthracite a comparatively simple problem as compared with the distribution of bituminous coal. The thousands of bituminous-coal mines spread out over twenty-six coal-producing states, with well-defined markets for certain kinds of coal and long-established channels of distribution involving much cross-hauling and long-distance

TABLE I

	1916-17 Distribution	1918-19 Allotment	Percentage of Increase	Percentage of Decrease
New England.....	9,833,379	10,331,000	16.95	.....
Atlantic states.....	27,878,233	31,417,154	12.69	.....
Central states.....	5,100,024	3,481,945	.....	31.73
Northwest.....	2,710,188	2,380,000	.....	12.18
Trans-Mississippi.....	627,965	.....	.....	100.00
Twenty-four states.....	137,966	.....	.....	100.00
Railroad supply.....	2,481,754	2,481,754	.....	.....
Canada.....	3,856,021	3,602,000	.....	6.59
Miscellaneous exports.....	51,930	51,930	.....	.....
Army and navy camps and cantonments.....	.....	600,000	.....	.....
Total.....	51,677,460	54,345,783	5.16	.....

shipments, combined to make government regulation of bituminous-coal distribution a very complex problem, beset with added difficulties on account of the dislocation of industries resulting from the war.

The first efforts to regulate the distribution of bituminous coal were made by the Committee on Coal Production of the Council of National Defense. In June, 1917, that committee was instrumental in organizing the Lake Erie Bituminous Coal Exchange at Cleveland, Ohio. This exchange is composed of shippers and consignors of coal which is to be transported via rail to Lake Erie ports for transshipment via vessels. The working regulations of this exchange provide that all bituminous coal for transshipment from Lake Erie ports, subject to the exchange, shall be consigned to the exchange and shall be graded as to kinds and classified as to

designated consigning pools under the direction of its executive committee. A statement issued by the exchange states that the proposed pooling plan contemplates (a) the reduction of grades and classifications of coal to a minimum, the classifications in 1916 having reached as high a number as 118 at one port; (b) the reduction of the number of boats detained at lake ports awaiting the accumulation of cargoes by individual shippers; (c) material reduction in switching services incident to the handling of coal on the basis of numerous classifications; (d) reduction in the demand on storage yards of lake cargo coal-carrying lines, these lines having held at lake ports during that part of the year 1916 when lake navigation was in full operation more than 20,000 cars daily; (e) an increased available boat tonnage by eliminating the attraction to return light from Lake Erie ports to Lake Superior ports. It was hoped to reduce, under the plan devised, the number of consignments of coal shipped to Lake Erie ports for reshipment by lake from 677 in 1916 to 97 in 1917. In 1918 the name of this pool was changed to Ore and Coal Exchange.¹

THE ZONE SYSTEM

The experience during the year 1916-17, when numerous coal shortages had developed in different sections of the country, relieved only partly by priority-shipment orders, made it clear that unless radical changes were effected with respect to the distribution of bituminous coal the most serious consequences would be likely to result in the immediate future. Accordingly the United States

¹ Other coal shippers' pools formed along similar lines are the Columbus Coal Shippers' Terminal Pool Association and the Liberty Fuel Exchange, which combines the coal shippers along the three principal railroad lines through Cincinnati. On the Atlantic Coast the Tidewater Coal Exchange serves a similar purpose. It was formed through the efforts of the Committee on Coal Production of the Council of National Defense and was formally approved by the United States Fuel Administrator on November 6, 1917, by an order requiring all transshippers of coal at New York, Philadelphia, Baltimore, and Hampton Roads to make shipments through this exchange. In a statement attached to the order it was said that the order would result in all shipments through these ports being handled through the medium of the exchange, and it was estimated that this would greatly decrease the detention of coal cars at the ports, increase the car supply at the mines, and at the same time make available at all times sufficient coal for emergency purposes for the army and navy requirements.

Fuel Administration, after prolonged conferences with coal producers, jobbers, and consumers, and with traffic and operating officials of the railroads, devised a zone system for the distribution of bituminous coal for the year beginning April 1, 1918. By an order of the United States Fuel Administrator, dated March 27, 1918 the states, with the exception of the Rocky Mountain and Pacific Coast states, were divided into fifty-seven zones, each of which is restricted to the use of coal from certain producing districts. The Rocky Mountain and Pacific Coast states under the zone system will be dependent for their bituminous coal, except for special purposes, on coal mined in Montana, Wyoming, Colorado, New Mexico, Utah, Washington, and Oregon. The whole zoning plan applies only to bituminous and cannel coals and not to anthracite coal or coke. In order to provide for consumers who require illuminating or producing gas, by-product coking, metallurgical smithing, or other particular purposes, or require special coals which are not produced in the coal districts from which the zoning plan permits shipments to be made, special permits covering such cases are issued. The zone system affects all bituminous coal except (1) coal for railroad fuel, for which special arrangements are made, (2) coal for movements on inland waterways, which is in no way restricted by the system, (3) coal delivered to Canada, which is subject to regulations of the Fuel Administration.

The purpose of the plan is to save transportation by the elimination of unnecessary long hauls and avoidable cross-hauls, thereby conserving the car supply and increasing car utility and the production of coal. The method of enforcement of the zoning system is simple. The United States Fuel Administration prohibits distribution beyond the limits of the zone, and the Railroad Administration supplements these prohibitions by railroad embargoes.

A statement issued by the United States Fuel Administration in connection with the zone order states that the general effects of the zone system is to restrict eastern coal to eastern markets and to fill the shortage in the Central and Western states with nearby coal produced in those states. In addition to the saving in transportation the system will provide for the possible retention of something like 5,000,000 tons of coal for the Eastern states which heretofore has gone West by rail. It will eliminate the movement of more

than 2,000,000 tons of Pocahontas coal to Chicago and other western points over a haul of about 660 miles. Chicago is to obtain this tonnage from southern Illinois mines with an average haul of 312 miles. On shipments of 550,000 tons annually from Kanawha districts to Wisconsin points it is planned to save about 2,500,000 car miles; on the movement from southeastern Kentucky to

TABLE II
ESTIMATED CONSUMPTION IN NET TONS OF BITUMINOUS COAL IN THE
UNITED STATES IN 1917 AND REQUIREMENTS FOR 1918-19

	1917 Amount	1918-19 Amount	Percentage of Increase 1918-19 over 1917
Industrial.....	204,907,000	242,024,000	18
Domestic.....	66,915,000	75,678,000	13
Gas and electric utilities.....	33,038,000	37,941,000	15
Railroads.....	155,000,000	166,000,000	7
Exports.....	24,000,000	24,000,000	0
Beehive coke.....	52,450,000	52,450,000	0
Bunker-foreign.....	7,700,000	10,000,000	30
Bunker-domestic, including Great Lakes.....	5,000,000	5,000,000	0
Used at coal mines for steam and heat	11,000,000	12,500,000	14
Total.....	560,010,000	625,594,000	12
Used from storage..... 4,375,000			
Exports..... 907,000	5,282,000		
Estimated production.....	554,728,000		
Substitution of coal for oil, mainly in west.....		2,000,000	
To increase stocks of industrial plants and public utilities outside of New England by ten days' supply.....		7,000,000	
Total requirements for 1918 with- out allowance for estimated conservation.....		634,594,000	
Production 1917.....		554,728,000	
Increase required.....		79,866,000	14.4

Chicago the saving is estimated at about 800,000 car miles, and the elimination of the Indiana to Iowa movement will save 1,600,000 car miles. The movement of approximately 300,000,000 tons of bituminous coal, or 60 per cent of the total production, will be regulated by the zone system.

Table II, compiled by the United States Fuel Administration, shows the estimated consumption of bituminous coal during the

coal year 1917 and the estimated requirements for the present coal year.

COAL PRICES AND PRICE FIXING

The inflated and speculative prices which obtained in the coal market during the spring and early summer of 1917, and which the maximum prices voluntarily agreed upon by the Committee on Coal Production of the Council of National Defense and bituminous coal operators at the meeting held in Washington on June 28, 1917, failed to stabilize, resulted in a nation-wide call for remedial action by the federal government. In response to this popular demand for effective price regulation President Wilson on August 21, 1917, before a United States Fuel Administrator had been appointed, fixed maximum mine prices for bituminous coal for twenty-two states, and on August 23 for anthracite coal. These prices were subsequently added to and revised at different times by the United States Fuel Administrator. Up to April 1, 1918, the number of additions and revisions amounted to 209, covering special prices for individual mines, changes in state prices, and prices for special coal fields or districts, like the Blue Gem district in Kentucky, the New River field in West Virginia, etc.

BITUMINOUS PRICES

Table III indicates the average prices of bituminous coal at the mines in 1915, the maximum prices agreed upon at the Washington meeting June 28, 1917 (so-called "Peabody-Lane" prices), the President's prices, and a selected list of the maximum prices fixed by the United States Fuel Administrator as in effect on April 1, 1918. To the maximum prices fixed by the United States Fuel Administrator should be added an allowance of 45 cents per ton for wage increase, granted under an order of October 27, 1917,¹ and an extra maximum allowance of 20 cents per ton to cover preparation or washing, authorized by an order of March 18, 1918. It is to be noted also that on May 25, 1918, a reduction was ordered amounting to 10 cents per short ton.

Table IV, prepared by the Director General of Railroads, illustrates the steady increase in the cost of railroad coal since 1915.

¹ See discussion in the section on labor condition, below, p. 698.

As the railroads consume about one-third of the country's coal supply and as most of the coal consumed by the railroads is sold at contract prices, these figures are of special interest.

TABLE III

	AVERAGE PRICE OF COAL AT THE MINES ACCORD- ING TO UNITED STATES GEOLOG- ICAL SURVEY, 1915	"PEABODY- LANE" PRICES JULY 1, 1917		MAXIMUM PRICES FIXED BY THE PRESIDENT AUGUST 21, 1917			MAXIMUM PRICES FIXED BY THE UNITED STATES FUEL ADMIN- ISTRATOR, EFFECTIVE APRIL 1, 1918		
		Run of Mine	Preferred Sizes	Run of Mine	Preferred Sizes	Slack or Screen- ings	Run of Mine	Preferred Sizes	Slack or Screen- ings
Alabama.....	\$1.28	\$4.00	.....	\$1.90	\$2.15	\$1.65	\$2.15	\$2.45	\$1.85
		3.50	.....	2.15	2.40	1.90	2.85	3.10	2.45
		3.00	.....	2.40	2.65	2.15			
Arkansas.....	1.79	.....	.....	2.65	2.90	2.40	3.70	4.60	2.40
							4.35	5.15	2.60
Colorado.....	1.59	.....	.....	2.45	2.70	2.20	2.25	3.50	1.25
							2.35	3.25	1.65
Illinois.....	1.10	2.75	\$3.50	1.95	2.20	1.70	2.65	2.90	2.40
				2.40	2.65	2.15	2.00	2.20	1.70
Indiana.....	1.10	2.75	3.50	1.95	2.20	1.70	2.00	2.20	1.70
							2.95	3.25	1.70
Iowa.....	1.78	.....	.....	2.70	2.95	2.45	2.70	2.95	2.45
							2.75	3.10	2.00
Kansas.....	1.66	.....	.....	2.55	2.80	2.30	2.70	2.95	2.45
Kentucky.....	1.01	3.00	3.50	1.95	2.20	1.70	2.65	2.90	2.40
				2.40	2.65	2.15	2.30	2.55	2.05
Maryland.....	1.28	3.00	3.50	2.00	2.25	1.75	2.40	2.65	2.15
Missouri.....	1.73	.....	.....	2.70	2.95	2.45	2.70	2.95	2.45
							3.15	3.40	2.45
Montana.....	1.62	.....	.....	2.70	2.95	2.45	2.70	3.60	1.00
New Mexico.....	1.44	.....	.....	2.40	2.65	2.15	4.25	5.05	3.55
							3.05	4.05	2.00
Ohio.....	1.08	3.00	3.50	2.00	2.25	1.75	2.00	2.25	1.75
		3.25	3.50	2.35	2.60	2.10	2.35	2.60	2.10
		3.50	.....					
Oklahoma.....	2.01	.....	.....	3.05	3.30	2.80	3.70	4.60	2.40
							4.25	5.10	3.00
Pennsylvania.....	1.06	3.00	3.50	2.00	2.25	1.75	2.60	2.60	2.60
							2.00	2.25	1.75
Tennessee.....	1.13	3.50	.....	2.30	2.55	2.05	2.65	2.90	2.40
				2.40	2.65	2.15			
Texas.....	1.65	.....	.....	2.65	2.90	2.40	3.60	4.40	2.25
							4.25	5.05	2.25
Utah.....	1.58	.....	.....	2.60	2.85	2.35	2.65	3.30	1.50
Virginia.....	.98	3.50	3.00	2.00	2.25	1.75	2.65	2.90	2.40
							2.40	2.65	2.15
Washington.....	2.17	.....	.....	3.25	3.50	3.00	6.00	5.25	2.50
							3.95	3.75	1.25
West Virginia.....	.97	3.00	3.50	2.00	2.25	1.75	2.40	2.65	2.15
				2.15	2.40	1.90	2.00	2.25	1.75
Wyoming.....	1.46	.....	.....	2.50	2.75	2.25	2.15	2.00	.....

The prices fixed by the United States Fuel Administrator in most cases show an increase over the President's prices, but it should be noted that the former take into consideration subsequent wage increases and increased costs in general. A comparison of columns 2, 3, and 4 with column 1 in Table III illustrates the marked rise in the price of coal during the war. While the "Peabody-Lane" price showed little variation, being in most cases \$3.00 for mine run and \$3.50 for prepared sizes, the President's prices show considerable variations, ranging from \$1.65 to \$3.50. The prices fixed by the United States Fuel Administrator show a still greater spread, due to the fact that they are based primarily on the cost of production in the different coal fields of the country.

TABLE IV

Year	Tons	Price per Ton	Total Cost
1915.....	122,000,000	\$1.13	\$137,860,000
1916.....	136,000,000	1.32	179,520,000
1917.....	154,000,000	2.12	329,000,000
1918.....	166,000,000	2.95	489,700,000

Regular monthly cost reports were required from coal operators by the Federal Trade Commission in accordance with prescribed instructions. These cost forms include the following main items: labor, supplies, debits and credits to cost, fixed charges and general expenses, selling cost, income statement, deduction from income, charges to fixed assets. Each of these main items is subdivided. Under fixed charges and general expense, for instance, come the following subdivisions: royalty, depletion, depreciation (structure, equipment, development), deferred charges, taxes, general insurance, disability or workmen's compensation insurance, officers' salaries and expenses, clerical salaries and office expenses, legal expenses, miscellaneous. Additional items provided for include the following: tonnage, sales, coal inventories, and general information, such as number of days worked, cause of idle days, average number of men employed per day worked, location of mine, coal field, kind of coal, number or name of seam, and average thickness of seam.

On December 6, 1917, the United States Fuel Administration issued rules of procedure for producers requesting a revision of mine prices or a change of territorial classification. These rules require applicants to make a detailed report to the Federal Trade Commission on specially prepared uniform cost sheets for the entire year 1916 and separately for each subsequent month up to the time of making application, with an attached statement giving the petitioner's reason for belief that a revision of price is justified. The Federal Trade Commission is to report to the Fuel Administration on its findings.

ANTHRACITE PRICES

The matter of fixing maximum mine prices for anthracite has proved to be comparatively simple. Comprehensive official data on the cost of production were available, and the number of anthracite mines is not large, while conditions at the different mines do not vary nearly as much as in the bituminous coal fields.

In its interim report to the Senate of the United States on anthracite prices, the Federal Trade Commission on May 4, 1917, states that the May price at the mine of ordinary white ash anthracite, allowing for the 40 cents discount, was approximately as follows:

	Gross Ton	Net Ton
Egg.....	\$4.05	\$3.61
Stove.....	4.30	3.84
Chestnut.....	4.40	3.93

The following table shows the maximum mine prices fixed by the President on August 23, 1917, for Pennsylvania anthracite coal.

	White Ash	Red Ash	Lykens Valley
Broken.....	\$4.55	\$4.75	\$5.00
Egg.....	4.45	4.65	4.90
Stove.....	4.70	4.90	5.30
Chestnut.....	4.80	4.90	5.30
Pea.....	4.00	.....	.....

The United States Fuel Administrator on October 1, 1917, fixed the maximum price of pea coal at \$3.40, \$3.50, and \$3.75, for the different qualities, respectively.

To the foregoing prices 35 cents is to be added for wage increase. The prices in the foregoing table are for coal from railroad companies' mines. The so-called independent-operators' mines are allowed to charge 75 cents per gross ton more. Special prices were fixed January 1, 1918, for Bernice and Spadra anthracite coal from Arkansas.

RESULTS OF PRICE FIXING

Regarding the general effect of government price fixing of maximum mine prices for coal, it must be said that coal prices have been stabilized successfully by the policy established by the Lever Act. The voluntary maximum prices agreed upon at the Washington meeting of June 28, 1917, proved a failure. Not only were the prices agreed upon considered too high by the general public, but failure on the part of many operators to abide by the agreement made the latter illusory, in the absence of an agency to enforce the agreement. The method of fixing mine prices followed by the Fuel Administration is elastic enough to permit revisions to be made whenever necessary, and a number of changes have been made thus far, including upward as well as downward revisions.

The problem of fixing maximum prices for coal, that are fair and reasonable to operators as well as to consumers, is much more difficult in the United States than in other coal-producing countries, on account of the large number of mines involved, the different kinds of coal, the varying conditions of mining among the different coal fields and even within the same coal field, such as thick and thin veins, high and low cost mines, etc. In view of these conditions the fixing of a uniform maximum price for all the mines in a certain coal field or in a whole state is likely to result in giving a slight advantage to some mines, while others are made to suffer. However this may be, it must be acknowledged that the price-fixing policy pursued by the United States Fuel Administration has been successful in accomplishing two results of fundamental importance in the war-time economy of our nation, viz., stability of prices and stimulation of coal production.

THE POSITION OF THE JOBBER

The question of the need of the coal jobber has been freely discussed during the past two years. Strong sentiment was aroused

throughout the country by the speculative transactions of many jobbers during the coal panic in the winter of 1916-17,¹ and the necessity of curbing the jobbers' profits was recognized generally. At the Washington meeting, June 28, 1917, under the auspices of the Committee on Coal Production of the Council of National Defense, a maximum jobbers' commission of 25 cents per net ton was agreed upon. On August 23, 1917, President Wilson fixed the jobbers' margin at 15 cents per net ton for bituminous coal, at 20 cents per gross ton for anthracite coal east of Buffalo, and at 30 cents per gross ton west of Buffalo. Under this order the jobber was also allowed 5 cents per gross ton in case he incurred the expense of rescreening coal at Atlantic or lake ports for transshipment by water.

In order to check up jobbers' transactions the Federal Trade Commission, in co-operation with the United States Fuel Administration, required jobbers to make bi-weekly reports on all their sales. According to a report issued by the United States Fuel Administration on March 10, 1918, refunds aggregating \$34,000 and covering forty-two cases of overcharges on coal sales had been made as a result of investigations of sales reports. Under an order by President Wilson of March 18, 1918, coal jobbers were required to secure a license on or before April 1, 1918, from the United States Fuel Administrator.

Certain abuses under the President's order of August 23, 1917, fixing jobbers' margins, principally the fact that certain producing concerns also operated as jobbers and charged a double profit, resulted in a change in the regulation of jobbers' commissions. Under the new rulings of the United States Fuel Administrator effective April 1, 1918, the jobber may buy coal, if he can, from the producer at less than the maximum government mine price, and resell the coal up to the maximum mine price, or he may serve as a purchasing agent for retail dealers or ultimate consumers and make a charge for his services not to exceed 15 cents a ton on bituminous, 20 cents on anthracite coal east of Buffalo, and 30 cents west of Buffalo. He may not charge both commission and profit in buying. If the jobber chooses to purchase and resell for his own account, he

¹ See *Report of the Federal Trade Commission on Anthracite and Bituminous Coal*, 1917, p. 58.

must procure a license; if he operates merely as a purchasing agent, he need not take out a license.

RETAIL PRICES

When retail coal prices began to rise in the fall of 1916, the Federal Trade Commission investigated the gross margins of retail dealers in different parts of the country, and issued bulletins at frequent intervals on the retail coal price situation in different cities. This method of keeping the public informed as to actual conditions in various retail coal markets exercised a restraining influence on dealers and was instrumental in focusing public attention upon abnormal conditions. Subsequently, when maximum mine prices had been fixed, it also became necessary to regulate retail coal dealers profits. On October 1, 1917, the United States Fuel Administrator issued an order to this effect: It provides that the retail gross margin added by any retail dealer to the average cost of coal shall not exceed the average retail gross margin of such dealer for the calendar year of 1915 plus 30 per cent; the state fuel administrators were charged with investigating the cost of coal distribution and the profits of retail dealers to make the latter conform with this order. Under this ruling the retail coal prices of different dealers vary greatly on account of the variations in costs. For instance, in Chicago the gross margins established for sidewalk delivery on household coal is from \$1.95 to \$2.20 per ton; on industrial coal, from \$1.70 to \$2.05. Since January 7, 1918, dealers have been permitted to add 50 cents per ton on account of increased cost of cartage, etc.¹ In St. Louis the gross margin has been fixed at \$2.50 to \$2.75 on Arkansas and Oklahoma semi-anthracite, smokeless, and anthracite, and at \$1.50 on steam coal. At Madison, Wisconsin, the retail gross margin has been established at \$2.10 for household coal and \$1.60 for industrial coal. In Pittsburgh, Pennsylvania, the retail gross margin for coal has been fixed at \$1.17½ per ton.² Retail coal prices the country over will be affected by a recent order of the Interstate Commerce Commission, effective June 25, 1918, which provides for an increase in the freight rates for coal amounting to from 15 cents to 50 cents per ton.

¹ *The Coal Dealer*, March, 1918. ² *Coal Trade Journal*, May 1, 1918, p. 577.

One of the most important actions taken by the United States Fuel Administration, in so far as coal prices are concerned, is the regulation of contracts, established by an order of December 24, 1917. Formerly the bulk of the coal sold by operators, wholesalers, and jobbers was sold on contract. The new order provides that no contract shall provide for the delivery of coal over a period longer than one year, that the contract price shall not exceed the fixed maximum prices, and that every contract shall be subject to cancellation by the United States Fuel Administrator.

LABOR CONDITIONS

The labor situation in the coal-mining industry of the United States has undergone some significant changes during the past three years as compared with pre-war conditions. In 1915 and 1916 the high scale of wages paid by manufacturers of war material, averaging about 20 per cent in excess of miners' wages, caused a steady migration from the coal fields to other industrial centers. The draft made additional inroads into the labor supply at the mines. According to John L. Lewis, until recently statistician of the United Mine Workers of America, out of a total membership of 450,000 mine workers, 19,135 members of the U.M.W.A. enlisted and 60,604 are subject to the draft. The reduction in the number of anthracite mine workers has also been considerable. While the number of mine workers in the anthracite coal fields of Pennsylvania before the war amounted to 177,000, in 1914 the number increased to 180,899, and in 1918 was reduced to 153,534. At the same time immigration from foreign countries, which formerly furnished a constant supply of mine labor, has come almost to a standstill.

The prosperous financial condition of the coal market and the scarcity of labor in the coal fields has greatly benefited the wage situation of mine workers. Several wage-scale increases went into effect during 1916 and 1917, and wages have been higher than at any previous time. The new wage agreement of April 1, 1916, for the Central Competitive District, comprising Pennsylvania, Ohio, Indiana, and Illinois, provides for a mine-run basis in paying wages, for which the miners' unions have been striving for many years.

Under this agreement the miners received a general increase of 3 cents a ton in the pick-mining rate, a corresponding advance in the machine rate, and 5 per cent increase for other classes of labor. Anthracite miners on May 1, 1916, made an agreement with the operators providing for an eight-hour day and a 3 per cent increase in wages. In 1917 two wage increases went into effect, one in April, approximating 20 per cent for bituminous-coal miners and from 10 to 35 per cent for anthracite miners, the other in October, for bituminous miners, amounting to 45 cents per ton. The 45-cent wage-increase agreement of October 27 was made subject to the condition that it shall not apply in any district in which operators and miners fail to agree upon a penalty provision preventing strikes and violations of agreements. The United States Fuel Administrator, in recommending to the President the 45-cent advance stated that these wage increases mean an advance over the wages of April 1, 1914, of 50 per cent to miners and 78 per cent to the best-paid laborers. It is further explained in this communication to the President that the United States Fuel Administrator in reaching the conclusion that coal prices should be increased was influenced partly by the provisions of the agreement intended to secure an increased and uninterrupted production of coal. Under the provisions of the draft law, the communication continues, miners are not excluded as a class. Considerable inroads have been made, as a result of the first draft, upon mine labor. Moreover, the conditions surrounding the industry in ordinary times account for the fact that the average number of days work in the year has been from 200 to 230 only. They also, in part, account for the fact that the average hours of labor per day have fallen considerably below the eight hours stipulated in wage agreements. According to John L. Lewis, the U.M.W.A. since the beginning of 1912 have secured wage advances amounting to from 30 to 104 per cent, varying according to the kind of labor performed.¹

In connection with these increases in wages at the coal mines it must be taken into consideration that employment at many coal mines throughout the country was very unsteady. The number of working days varied greatly on account of frequent shutdowns due to lack of car supply, so that while wages were high the number of

¹ *Coal Age*, 1918, p. 204.

working days lost materially cut down the total monthly earnings of the mine workers.

Another factor deserving attention is the high fatality record in coal mines brought about by war-time conditions. The abnormal circumstances under which the coal mines have been operated, high-speed production in spite of labor shortage, and frequently with inexperienced help, as well as less attention to safety regulations than under normal conditions, are responsible for an increase of 21 per cent in the coal-mine fatalities during 1917 as compared with 1916. The greatest increase in fatalities was caused by falls of roof or face, while mine cars and locomotives account for the next highest increase, followed by gas and dust explosions.¹

Labor unrest and strikes have been frequent. In most cases, however, an agreement was effected without long-drawn-out strikes, although in many instances strikes considerably reduced the normal output of mines. Data compiled by the United States Geological Survey show that in 1916 coal miners' strikes involved 91,152 men in the bituminous and 79,481 men in the anthracite coal fields. The total number of days lost in that year on account of strikes amounted to 2,389,519 in the bituminous and 955,067 in the anthracite coal fields, while the average number of days lost per man was 26 for bituminous and 12 for anthracite miners. Data compiled for the year 1917 from coal trade journals indicate that there were 66 coal miners' strikes in 12 states, involving 251,595 mine workers.

The benefit of workmen's compensation insurance laws in coal-mining states is illustrated by the operation of the Pennsylvania laws in 1916. There were 792 fatalities in the anthracite and bituminous coal fields in that year. The amount of compensation paid for fatality cases in the anthracite field amounted to \$1,260,804 and for disability cases \$410,845. In the bituminous coal fields of that state 301 workers were killed and 10,710 injured or disabled. The compensation paid for fatality cases amounted to \$771,748, for disability \$516,493, while the total number of dependents of miners killed and injured was 10,179.²

Organized labor in the coal fields of the United States has grown in number and influence during recent years. According to

¹ *Coal Mine Fatalities in the United States, 1917*, U. S. Bureau of Mines.

² *Coal Age*, 1918, p. 409.

statistics published in connection with the recent meeting of the U.M.W.A. at Indianapolis¹ the membership of the U.M.W.A. in October, 1917, amounted to 415,305, or 57.60 per cent of the total number of men employed in the coal industry of the country. From 1910 to 1917 the membership of the U.M.W.A. has increased 75.93 per cent. There are twenty-eight union districts in the various coal-mining states, of which the Illinois district, No. 12, is the largest, with a membership of 87,189, the next largest being the Central Pennsylvania district, No. 2, with 45,082 members.

THE COMBINATION MOVEMENT

The conditions incident to government regulation of the coal industry have given a powerful stimulus to the organization movement in the coal trade of this country. The coal industry was one of the few important industries of the United States which prior to the war had no trade organization covering the whole country. Local coal operators' associations have existed for several years past in a number of coal fields. There were a few local wholesalers' and jobbers' associations and a large number of well-organized local and state associations of retail coal dealers. In 1917 national associations were formed in each of these three divisions of the coal trade, while the number of local associations increased at the same time. The National Retail Coal Merchants' Association, with headquarters at Washington, and the National Coal Jobbers' Association were both organized in 1917 and combine most of the local retail and jobbers' associations. The National Coal Operators' Association was organized on October 23, 1917, with headquarters at Washington. The members handle about 350,000,000 tons of bituminous coal per year.²

THE COAL EXPORT SITUATION

The coal export trade of the United States since the outbreak of the present war in 1914 offers some very interesting changes. The most significant development during that period is a shifting of the control of the world's coal markets. The withdrawal of a large percentage of the normal British coal tonnage from oversea markets opened up promising new trade channels for American coal, espe-

¹ *Coal Age*, February 2, 1918.

² *Proceedings of the First Annual Convention of the National Coal Association*, May, 1918, p. 7.

cially for the high-grade products of the New River and Pocahontas coal fields situated so favorably with regard to our oversea shipping ports. American coal exporters recognized the opportunities confronting them, particularly with respect to South American markets, with the result that our bituminous coal exports to South America increased from 441,368 tons in 1913 to 1,840,128 tons in 1916. The rapid expansion of our coal trade however came to a sudden stop in 1917. The enormous demand for coal and the lucrative profits in the home markets caused interest in the export trade to lapse. Subsequently the scarcity of ships, high freight and insurance rates, and an increasing number of war restrictions were instrumental in reducing coal exports still more. While the total exports of coal from the United States amounted to 24,079,209 gross tons in 1916 and to 27,929,141 gross tons in 1917, an increase of 3,849,930 gross tons, or 16 per cent, this increase is attributable solely to increased exports to Canada. In 1916, 16,597,390 gross tons of coal were shipped to Canada from the United States and in 1917 the coal shipments amounted to 22,442,520 gross tons, an increase of 5,845,130 gross tons.

If we exclude the coal exports to Canada the remaining exports of coal from the United States to foreign countries show a decrease of 1,995,198 gross tons, or 26.7 per cent, for the year 1917 as compared with 1916. The countries to which coal exports from the United States increased more than 10,000 tons during 1917 are Chile, with an increase of 138,998 tons; Cuba, 51,155 tons; Danish West Indies, 13,430 tons; England, 44,411 tons; Jamaica, 13,500 tons; Mexico, 35,646 tons; Panama, 195,705 tons; Portuguese Africa, 12,556 tons; and Spain, with an increase of 20,571. The following decreased coal exports are significant: to Argentina, 599,370 tons; Brazil, 98,009; Egypt, 90,722; Greece, 45,998; Italy, 1,204,599; Norway, 55,096; Sweden, 70,986; Uruguay, 92,767.

Coal for bunkering and for export is now controlled by the United States Fuel Administration. An order of December 13, 1917, provides that coal for bunkering and for export, except for Canada and Mexico, shall be sold at the maximum mine prices plus \$1.35 per short ton. An order of April 1, 1918, prohibits the shipment of coal to any port for bunker purposes without permission of the United States Fuel Administrator.

While it remains problematical, of course, what the developments of the American coal export trade will be in the post-bellum period, certain outstanding facts can be recognized even now, which may have an important bearing on the future export situation. A survey of all the coal-consuming countries of the world shows a world-wide dearth of coal which promises to continue throughout the industrial reconstruction period after the war. Great Britain and Germany, the two countries which produce the greatest tonnage of coal next to the United States, will, according to well-informed authorities, need most if not all of their coal at home, and will not be able to export any large tonnages to foreign markets for several years to come.

The United States with its enormous coal resources, greatly increased output, and many hundreds of new mines will be the logical source of supply for the bulk of the demand from oversea markets formerly supplied by Great Britain and Germany. A second and very important factor to be taken into account will be the new American merchant marine now under construction. Prior to the war control of the coal export market was determined chiefly by the abundance and cheapness of transportation and the ready availability of transportation to the coal fields. This gave Great Britain the leading position in the coal markets of the world. As conditions are shaping themselves at the present time it looks as though the United States, as the leading maritime power, would become the main dependent of the world for coal in the future. Whether this is altogether desirable from an economic point of view is another question. It may be more desirable for the United States to sell coal in combination with the other raw materials as a finished product rather than as a raw material. In the interest of our infant by-product industry it may, in fact, be highly desirable to export coke rather than coal and to extract the by-products from our coal before we export it in the form of coke.

The question of labor supply will constitute a further important factor in deciding the future position of the United States in the oversea coal markets, and here again conditions seem to favor this country. Our newly established banking and credit facilities in foreign countries; the strategic location of the Panama Canal and its excellent bunkering facilities; the large modern tide-water

loading piers at Lambert's Point, Sewall's Point, and Newport News; the fact that during the past two years most of the labor-saving devices placed in American coal mines were installed in the mines whose production is best available for export trade; and last but not least such recent constructive federal legislation as the Webb law for promoting co-operation in foreign trade and the helpful work of the United States Tariff Commission—all these factors combined promise a most auspicious future for the American export coal trade.

SUMMARY

In the foregoing survey of the coal situation in the United States during the past three and one-half years of the present war three separate periods can be clearly distinguished. The first period, characterized by a widespread financial depression, extended up to the summer of 1916. Overproduction and unsound business conditions, resulting chiefly from unlimited competition, led to efforts being initiated by the federal government to improve the unhealthy situation obtaining in the coal industry. This was the case particularly in the bituminous coal industry. In the fall and winter of 1916-17 the situation changed completely. A rapidly increasing demand for coal, local coal shortages, and panic prices led to numerous investigations by municipal, state, and federal authorities for the purpose of protecting the public against exorbitant prices and to procure adequate supplies of coal. In a considerable number of cities throughout the country municipal coal yards were established, primarily for the purpose of providing fuel at reasonable prices for the needy.¹ Efforts to stabilize coal prices by voluntary agreement having failed, Congress enacted the Lever law, which provides for government regulation of the coal industry and trade. The enactment of this law marked the advent of the third period, in which the coal industry of the country was placed under the control of the United States Fuel Administration. Five outstanding features characterize this period up to the present time: (1) government price fixing, (2) increased production, (3) difficulties of transportation, (4) regulation of distribution, and (5) systematic conservation.

¹ *Municipal Coal Yards*, Municipal Reference Bureau, University of Wisconsin.

The need of stabilizing coal prices was the first important economic problem which developed out of war conditions as far as the coal situation was concerned and for which a solution had to be found. By fixing maximum mine prices as well as jobbers' and retailers' margins which allowed a fair profit, this phase of the coal situation was successfully taken care of.

Closely linked up with the question of prices is the problem of production. The high prices prevailing in the coal market prior to government regulation and the liberal policy followed by the United States Fuel Administration in establishing maximum mine prices had the effect of stimulating the production of coal and made it unnecessary for the government to adopt extraordinary measures for increasing production. Unquestionably the large and steady increase in the coal production of the United States constitutes the most significant as well as the most encouraging feature in the war-time coal situation of the whole world. The output of American coal mines might have been still greater if difficulties of transportation and car shortage had not interfered.

Inadequate transportation facilities has formed the most disturbing element in the whole coal situation thus far. Under Federal control of the railways this serious drawback may be remedied in the future. The large increase of rolling stock provided for by the United States Railway Administration promises relief in due course of time. But until an adequate car supply at the mines and speedy movement of coal shipments from the mines to market shall be realized the coal situation will continue to remain an ever-menacing danger to our national welfare.

In view of these conditions the problem of regulating distribution and of conserving and husbanding our available coal supplies has become of vital importance. By means of the zoning system, recently established, the United States Fuel Administration proposes to bring about a more efficient distribution of coal shipments. Already the fuel supply allowed certain industries has been curtailed under agreement with the United States Fuel Administration and further measures to conserve the available supply of coal, fuel oil, gas, and electricity may become necessary.

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COMMERCIAL BANKING AND CAPITAL FORMATION

III

I. INTRODUCTION: THE PROBLEM OF LIQUIDITY

In the analysis of the various ways in which commercial banks provide funds for the business world, which constituted the subject-matter of the discussion in the preceding paper,¹ the question of the liquidity of assets was continually pertinent. Detailed discussion of this subject was, however, deliberately avoided there in the belief that it could best be treated as a separate topic. What now is the effect of investment or fixed capital uses of funds upon the liquidity of bank assets? Is the theory underlying our banking legislation wrong, or have our banks constantly been in a perilous condition, and is it because of investment loaning that we have had recurring financial disasters? In order to make an adequate analysis of the problem of liquidity it is necessary to differentiate between ordinary times and the occasional periods of great financial strain. We shall consider each in turn.

The theory underlying our commercial banking legislation has been, as already noted, that inasmuch as the deposits of commercial banks are largely demand obligations it is necessary for such banks to invest their funds mainly in short-time paper growing out of genuine commercial operations. With maturities carefully arranged in rotation it is argued that a bank may reasonably count on having funds coming in each day substantially equal to the amount going out. The chief difficulty arises of course during the periods of seasonal strain, and hence it is good policy to have an unusual amount of loans falling due at the beginning of such seasons. With an extensive and varied commercial clientèle it is believed that a carefully managed bank can get on with a very slender margin of reserve for day-to-day "till-money" purposes.²

¹ *Journal of Political Economy* (June, 1918), pp. 484-508.

² True, we required fairly large minimum reserves under the old national banking law, but this was not for till-money purposes. It was rather an ultimate or liquidation safety fund.

The test of efficient bank management is to keep the reserve at all times as low as possible—consistently of course with safety.

In the analysis of this problem of liquid assets we shall discuss the practice that has developed among the rank and file of efficiently managed banks. It will be necessary to confine our attention to the period before the establishment of the Federal Reserve System—for now liquidity of assets from the standpoint of an individual bank is mainly a matter of availability for rediscount, while the forms of paper that are available for such rediscount is merely a matter of legal definition. Since it was before the establishment of the Federal Reserve System that the theory that commercial paper is automatically self-liquidating and that investment paper is inherently unliquid was elaborated, we must test this doctrine in the light of experience before the law conferred special privileges upon commercial paper.

II. COMMERCIAL LOANS TO CUSTOMERS NOT A RELIABLE SECONDARY RESERVE

To what extent, first, are commercial loans to customers to be relied upon as the source of a steady inflow of funds to a bank? Theoretically, a short-time commercial loan, whether based on a specific transaction or on the excess of inflow over outflow of funds within the period of the loan,¹ is almost certain to be paid at maturity, because the use of the funds during the life of the loan automatically creates the means for its repayment. In practice, however, we find that commercial loans made to a bank's own customers are by no means universally liquidated at maturity. In the country banks it is not an uncommon practice to grant repeated renewals—a loan often being extended for many years.² These long extensions do not necessarily indicate that such loans are used for investment or that they constitute doubtful assets. They may indicate merely a continuous need for borrowed working capital. On the part of the bank it is simpler to extend the loan than to make a new one; on the part of the borrower it is more convenient

¹ See analysis in preceding paper, *Journal of Political Economy* (June, 1918), pp. 645-48.

² I know of one case where a single short-time note was extended seventeen years before payment.

to have the loan extended than to clean up or liquidate the business only to seek another loan the following day. It is probable, however, that in the country a considerable percentage of these renewed loans is devoted to non-commercial uses.

Even in the commercial centers renewals of commercial loans are very common, if not indeed the rule. Well-informed bankers have estimated that at least 40 or 50 per cent of unsecured loans in the large cities is renewed at maturity. In fact, bankers usually grant their customers renewals whenever they ask for an extension of time—so long as there are no disquieting developments in connection with the borrower's business—and with the reservation that the customer must pay off his loans entirely at least once a year.¹ This "pay once a year" practice should be constantly kept in mind, for it has a very important bearing on the whole theory of commercial loaning.

The reason for renewing short-time loans with such abandon is in part the stress of competition between rival banks and in part the *continuous* nature of so many lines of activity. To pay up means merely to borrow again immediately, for the business does not have sufficient working capital of its own to finance its operations. It is more convenient to grant a customer a "line of credit," to "rate a borrower" as a \$10,000 or a \$100,000 safe risk, and to force no payments so long as he keeps within the limit that has been set.

This continuous demand for working capital is characteristic of many lines of activity. Conspicuous among these, of course, are manufacturing, wholesaling, and retailing in staple lines. Mr. C. W. Barron states:

The theory is that a commercial loan based upon consumable products liquidates itself. But until the world stops eating and drinking, or wearing clothes, or consuming fuel, there is a new note right behind the one liquidated by the consumable commodities. Across the continent there is a line of sheep and a commercial note on the tail of each sheep in endless procession. There is no fluctuation possible with commercial notes based on consumable commodities unless prices are changed, or the capital of the merchant, or middleman, is expanded.²

¹ This reservation is by no means universally enforced. See analysis below, pp. 714-22.

² C. W. Barron, *Federal Reserve Act*, pp. 70-71.

Perhaps this is pushing a good point somewhat too far, but it is roughly applicable to many lines of industry.

It is not only in the case of large concerns dealing in staple lines that the business is not distinctly seasonal; it is equally true with the innumerable small retailers and shopmen engaged in general merchandising in staple lines. These also have continuous requirements for working capital, much of which is borrowed from banks on notes that are repeatedly renewed.

This point of view must of course not be carried to an extreme. It is to be borne in mind that many of these commercial notes are paid at maturity. Not all businesses have a continuous need for borrowed working capital; and in so far as businesses are seasonal commercial loans are not indefinitely renewed and funds do flow into the loaning bank at maturity. Reliance on these maturities as a secondary reserve is, however, unsatisfactory, owing to the fact that the banker can never know, so long as he adheres to the policy of renewing loans at the pleasure of the customer (with settlements once a year at best), just what percentage of the maturities of any given date will be paid. Except in the cases where it is definitely known that renewals will not be sought,¹ commercial-paper loans are in effect twelve months' loans,² this in accordance with the "clean up once a year" practice. In consequence, to insure a fairly steady flow of funds into the banks, the maturity dates for, say, three hundred different customers would have to be arranged for consecutive days throughout the year, with such variations as would be necessary to meet the periodic stresses. Such a rotation would, however, be possible only if the businesses represented by the three hundred customers chanced to reach their respective natural liquidating dates on three hundred different days. Although there are no very precise data bearing on this matter, it goes without saying that such is not the happy coincidence of affairs.

¹ True, the banker reserves the right to refuse a renewal if the loan appears doubtful; but we are speaking here of the degree of reliance that may typically be placed on an inflow of funds from maturing commercial loans, not on the means at the disposal of the bankers for avoiding ultimate losses.

² Of course it is not exactly twelve months. Some concerns with distinct seasons may be entirely cleaned up for several months.

It would be interesting to know to what extent such businesses as do pay regularly at maturity furnish the banks with a steady, as against an intermittent, flow of funds. Data on the subject do not appear to have been anywhere assembled, but it seems probable that the duration of loans to such concerns is long rather than short. Businesses dealing in staples are, as we have seen, likely to be granted renewals as a matter of convenience, and hence such liquidating of loans as they may make is not spread evenly over the year. It would appear, moreover, that the "pay at maturity" businesses would rather be those which are distinctly seasonal—with a fairly long production (if it is a manufacturer) and selling period and then a considerable interval of slack times during which no loans are required. The result of this is that a steady flow of funds into the bank from this source cannot be relied upon by any individual bank in any given locality. Manufacturers, for instance, generally have to borrow from six to nine or ten months for the reason that goods manufactured in January and February, for example, are often not purchased by the final customers until the following autumn. Banks may loan such concerns on three months' paper and renew the paper two or three times; or they may, as some banks do, make them six or nine months' loans in the first place and be done with it. The time for which a note runs, therefore, may or may not throw any light upon the probability of its payment at maturity. It is interesting to note in this connection that the loans through commercial paper houses, where renewals are never granted, are largely of six months' duration and seldom of so short a period as three months.

III. OTHER SECONDARY RESERVES

We may conclude from the foregoing analysis that the commercial paper of a bank's own customers is among the least reliable of all bank assets as a means of replenishing depleted reserves. Further evidence of the truth of this statement may be found in the practice that the banks commonly followed, prior to the Federal Reserve System, of employing other assets than customers' paper as a secondary reserve. Various methods have been used by the different banks in this connection; hence the statements which

follow cannot be taken as of universal applicability. With any given bank one or the other, or a combination of methods, has been used.

In the first place, the small suburban banks do not depend upon maturing commercial paper as a secondary reserve for ordinary requirements but rely upon their established connections with the larger banks. These small private and state banking institutions as a rule keep small resources of cash on hand and depend continuously upon the large commercial banks. They either borrow from these affiliated banks directly, or dispose of securities in the market, thus drawing indirectly upon other banks.

Secondly, a very general practice has developed, particularly since the panic of 1907, of using as a secondary reserve paper purchased through a commercial paper house. A large volume of this "purchased paper" is commonly bought by banks—with maturities arranged so that limited quantities will mature from day to day to meet current cash payments, and larger amounts will mature in periods of heavy demand for accommodation from local borrowers. It is estimated that the "purchased paper" annually held by the commercial banks of the United States now amounts to over four billion dollars. With this indirect method of loaning, the relationship between the bank and the borrowers is impersonal, and favors in the way of extensions of time are therefore neither asked nor expected. Such paper is never renewed, and hence a bank can count on funds coming in from its payment at maturity.

Other methods of securing funds in case of need are rediscounting between banks and interbank borrowing by sundry methods. Rediscounting did not develop into a general practice¹ before the Federal Reserve act, owing mainly to the local prejudice of customers against having their notes sent to the financial centers. It appeared to reflect upon the soundness of the bank if it had to borrow from La Salle Street or Wall Street—particularly if on the security of customers' notes. A much more common practice was that of having an official of a bank borrow on his single-name note, the funds thus borrowed being deposited in the name of the official, who of course would not withdraw the amount until the

¹ It was not, however, an uncommon practice in the South.

emergency was passed. A third very common method of inter-bank borrowing is selling bonds with an agreement to repurchase shortly. This is, in effect, a loan of funds on the bonds as security, though for convenience the bonds are sold outright, no note being given.

Finally, bonds have been extensively used as a secondary reserve. Bonds have long enjoyed a vogue among bankers in this

TABLE I
CHARACTER AND AMOUNT OF BONDS AND STOCK
INVESTMENTS

OF ALL NATIONAL BANKS*

United States bonds.....	\$ 731,205
State, county, and municipal bonds.....	278,180
Railroad bonds.....	467,629
Other public-service corporation bonds.....	274,928
All other bonds.....	301,503
Claim warrants.....	43,818
Judgments.....	4,703
Foreign government securities.....	116,768
Other foreign securities.....	40,303
Stocks.....	39,272
Total.....	\$2,298,309

* *Comptroller's Report* (1916), pp. 166-69. (ooo omitted.)

OF 15,450 STATE BANKS†

United States bonds.....	\$ 1,311
State, county, and municipal bonds.....	31,440
Railroads.....	2,006
Bonds of other public-service corporations (in- cluding street and interurban railway bonds)	14,809
Other bonds, stocks, warrants, etc.....	643,721
Total.....	\$ 693,287

† *Ibid.*, p. 852. (ooo omitted.)

connection, and in ordinary times they may be readily sold through the machinery afforded by the organized exchanges. The serviceability of bonds for this purpose obviously depends upon their character, particularly their marketability. Table I shows the classification of bonds and stocks for national and state banks.

It is apparent that in the main bank investments in bonds are of high grade as to both security and marketability. It should be

understood, moreover, that it is unnecessary for *all* such holdings to be readily marketable, for the need of additional cash for seasonal demands is not unlimited. A margin of readily marketable securities is all that is required.

IV. LIQUIDITY OF COLLATERAL LOANS

Turning now to the liquidity of secured loans, we find that in practice the process of repayment of a time collateral loan is very similar to what it is with commercial loans. A great many collateral loans are paid at maturity from an excess of current income over outgo. If the loan is small in amount in comparison with the size of the business, payment at maturity can often be made even when the funds are devoted to fixed capital uses. And wherever collateral is deposited as a means of procuring working capital, as in the case of the underwriters, bond houses, and stockbrokers, such loans can very frequently be paid at maturity. The sale of the securities bought with the borrowed funds provides the means of payment, just as the sale of goods bought with borrowed funds provides the means of payment in the case of commercial loans. The only difference, as already noted, is that of the degree of risk involved, and hence of the certainty of prompt repayment, in the general run of cases.

But, like the commercial borrower, these financial dealers must borrow more or less continuously; though there is doubtless more variation than in staple lines of trade. It follows from this that renewals are, as in the case of commercial paper, freely granted. Available data do not disclose, however, whether the percentage of renewals is greater or less here than with commercial paper.

Where collateral loans are made for margin trading, however, the problem of repayment is somewhat different. Here the borrower is not a middleman engaged in the routine selling of securities. He may sell shortly if the market is favorable, but he may, on the other hand, hold his stocks for a considerable period. It is obviously because of this indefinite duration of the need for the borrowed funds that the broker prefers so commonly to borrow on call. Now unless the bank calls the loan we may conclude that as a rule the call loan is paid by the sale of securities bought with the borrowed

funds. It is thus a self-liquidating operation. But if the loan is called by the bank, then the borrower has to pay the loan by borrowing elsewhere, in which event the funds come from another bank.

All in all, it is undoubtedly true that time collateral loans are more reliable as a secondary reserve than commercial paper loans to customers. When an unsecured loan is not paid at maturity, the bank has no means of converting it into cash. But when a collateral loan is not paid, the bank has an alternative of disposing of the collateral in the open market.¹ The prevailingly lower rates on time collateral than on commercial loans in the United States attest their superior liquidity. It has often been pointed out that the rates on commercial paper in foreign countries are lower than those on collateral, but that in the United States we have had the "anomaly" of prevailingly lower rates on time collateral than on (self-liquidating) commercial loans. A sufficient explanation of the lower rates on commercial paper abroad is the liquidity given to commercial paper through the rediscount privileges extended to it by the central banks. This liquidity is therefore an arbitrary liquidity and does not arise from any automatic commercial processes. Similarly, a sufficient reason for the lower rates on time collateral in this country prior to the Federal Reserve law is the superior market for the conversion of collateral into cash, which is afforded by the stock exchange.²

V. COMMERCIAL BANKS FURNISH PERMANENT WORKING CAPITAL

There is a traditional theory that commercial banks make only temporary advances to borrowers, that they do not in any sense enter into partnership with business and furnish them permanent working capital. The facts of modern banking practice do not, however, bear out this assumption. In the foregoing discussion of secondary reserves we found that in many cases loans were repeatedly renewed, and that if settlements were made they were made

¹ It is often unwise for a banker to enforce this right, however, for he cannot afford to offend his customers needlessly. Close competition tends in many cases to render the banker timid in the matter of selling out a borrower.

² See Earl P. Carman, "The Change in Credit Methods Made Necessary by the Federal Reserve Act," *Commercial and Financial Chronicle* (1915), pp. 1396-97.

only once a year. In practice we find that concerns in staple lines very frequently do not completely liquidate at any time with their banker.

THE INDIVIDUAL BANK AND WORKING CAPITAL

Table II shows the monthly loans of a representative group of medium-sized concerns which borrow from a large Chicago bank.

The figures for the jobbing concern show that the jobber is able to clean up entirely every year as his activities are more of a seasonal nature than are those in the other lines.¹ Other concerns, on which I have data, which entirely liquidate are: brush manufacturer; printer and engraver; manufacturer of men's neckwear; jewelry jobber; lumber manufacturer. It is a common principle among the larger banks, however, that the smaller retailers should not borrow from the banks except for temporary extraordinary requirements—that they should have enough capital of their own to finance their normal operations. The smaller banks, however, often carry the little retailers continuously;² and very commonly the retailers are carried continuously by the wholesalers. Nystrom says, "while retailers are always paying up their debts to wholesalers, their purchases in advance of payments always run up into the hundreds of millions of dollars."³ He adds that the average amount of credit granted to retailers is estimated at from \$400,000,000 to \$750,000,000. The wholesalers, moreover, borrow heavily and more or less continuously from the commercial banks; hence the banks indirectly largely finance the marketing process as a whole.

How far American bankers have departed from the practice of lending only on the basis of specific, completed transactions, and how they now emphatically ally themselves with businesses in a more or less permanent way, may be understood by reference to the

¹ Medium-sized concerns are used here because the large establishments borrow from so many sources that the figures from a single bank reveal nothing. For borrowings of larger concerns through commercial paper houses see below, pp. 719-20.

² It is important to note in this connection that the large banks do not escape the responsibility of this permanent carrying of the retailers, for the smaller banks look to their correspondents, the larger banks, for accommodation when reserves are low.

³ *Economics of Retailing*, p. 36.

TABLE II
MONTHLY INDEBTEDNESS OF REPRESENTATIVE BORROWERS FROM BANKS*

WHOLESALE GROCER †					
Net worth 1913, \$640,000					
Net worth 1918, 970,000					
Months	1913	1914	1915	1916	1917
January	185	120	53	50	50
February	192	71	34	.....	50
March	172	47	17	50	100
April	130	32	5	50	50
May	120	30	3	50	50
June	118	.....	102	50	100
July	125	.....	100	100	100
August	122	.....	150	100	150
September	151	27	150	100	175
October	144	55	150	.....	200
November	144	63	150	100	200
December	162	57	75	100	150

CANNER OF FRUITS, ETC. ‡					
Net worth 1913, \$ 790,000					
Net worth 1918, 1,049,000					
January	65	185	50	105	215
February	85	190	95	100	185
March	100	185	95	105	75
April	100	165	80	90	.....
May	85	135	75	95	.....
June	100	100	70	90	.....
July	115	90	70	60	.....
August	115	40	70	35	.....
September	120	40	80	80	.....
October	130	45	130	120	105
November	150	45	140	155	70
December	150	40	105	180	.....

MANUFACTURER OF MEN'S CLOTHING					
Net worth 1913, \$300,000					
Net worth 1918, 350,000					
January .....	.....	.....	50	100	150
February .....	.....	10	100	125	200
March .....	.....	20	100	150	200
April .....	.....	50	65	150	175
May .....	.....	50	50	150	175
June .....	.....	.....	50	150	150
July .....	.....	25	50	150	150
August .....	.....	50	50	200	125
September .....	.....	50	70	200	175
October .....	.....	35	70	200	175
November .....	.....	35	70	180	150
December .....	.....	50	70	180	150

* The figures represent dollars, 000 being omitted from each amount. The names of the concerns were furnished in confidence, hence they cannot be published.

† Also borrows elsewhere.

‡ Began to use broker in 1917.

TABLE II—*Continued*

MANUFACTURER OF PAINTS

Net worth 1913, \$190,000
 Net worth 1918, 270,000

Months	1913	1914	1915	1916	1917
January.....	20	5	35	55	70
February.....	45	10	60	75	90
March.....	65	60	70	100	125
April.....	65	65	75	105	135
May.....	60	65	70	95	115
June.....	60	60	50	85	95
July.....	40	45	40	65	65
August.....	20	40	25	50	50
September.....	10	35	20	35	35
October.....	5	15	15	30	30
November.....		10	15	35	45
December.....		25	35	45	50

JOBBER IN HIDES, WOOL, ETC.

Net worth 1913, \$ 975,000
 Net worth 1918, 1,635,000

January.....	125	195	197		244
February.....	85	151	71		264
March.....	60	120			131
April.....		71			80
May.....		71	25		40
June.....	25	163	62	50	104
July.....	172	289	286	259	209
August.....	223	312	239	289	80
September.....	245	315	132	289	
October.....	172	176	107	318	16
November.....	169	78	27	391	157
December.....	177	126	27	341	

following extracts describing the industrial service department of the National City Bank of New York. Mr. Schwedtman, vice-president of the bank, states:

A large part of our commercial life is operated upon an industrial basis and the banks of the country must organize themselves to render credit-extension service sufficiently interpreted in terms of plant and equipment, personnel of officers, labor conditions in the factory, type and quality of product, profit and loss based on scientific cost.

The industrial service department hopes to place the emphasis in its relation with clients on better methods of doing business and on the necessity of scientific cost keeping and more efficient management.

That a business today is prosperous and can show a favorable balance sheet, that it now enjoys the best of credit locally and is by all who have relations with it held in high esteem, is certainly useful information; but it is by no means assurance positive that two, five, or ten years hence that business will still be in the running. Every institution, even as every individual, contains within itself the potentiality of better things or worse, and just as the sea is always calmest immediately before a storm, so the business apparently smooth and serene today may tomorrow or a year hence begin to develop the disorders which foretell the coming decline. The trained industrialist is not deceived by surface indications, but, like the skilled navigator, is able to look through and beyond and perceive an impending crisis in affairs long before there are book evidences of it.

The service must not, however, be merely preventive. It must at the same time furnish remedial advice, to the end that industries, although temporarily in a difficult position, may be helped into better financial standing and thus in due course become profitable and in line for definite extension of credit.¹

The following statement presents the view of a New York banker with reference to the annual liquidation of borrowers' indebtedness:²

The *theory* of business enterprise and finance would seem to require that the average business concern should liquidate its indebtedness to banks at least once a year. In *practice* this is seldom possible except in lines of business in which there is, say, but one or possibly two definite seasons. For example, the cotton seed oil and the beet sugar business occur to me as two lines of endeavor in which it is quite customary for a concern to "clean up" its bank indebtedness each year. The raw wool business is another. These are businesses, however, in which there is but one season, and it is the natural thing for concerns engaged in them to get out of debt at the end of the season and stay out until the next season arrives. Many shrewdly managed manufacturing concerns, principally those having a constantly turning business, do not go entirely out of debt, however, at any time. They may reduce their debt by substantial amounts and evidence the liquidity of their affairs in many ways, but they do not manage or care to "clean up" entirely. Many others do not even make the attempt. It should naturally follow in such cases that the owners of such businesses should increase the amount of permanent paid-in capital. Oftentimes, however, business managers hesitate to increase capitalization for fear the control of a business may slip out of their hands, and hold off as long as possible. There are many other reasons why business managers sometimes hesitate to increase the capital of a business when they ought to do so. But

¹ See *The Americas*, III, No. 10 (July, 1917), p. 9.

² Personal letter to the writer.

the mere fact that a concern should have additional capital does not necessarily mean that a business is not being managed properly. The bankers endeavor to consider every factor. In other words, it is impossible to place business concerns in but two classes: (1) the concern which cleans up each year and has ample capital resources; and (2) the concern which is short of working capital and therefore undeserving of banking accommodations. There are many grades and degrees of financial standing and banks find they must consider many factors.

These statements clearly indicate that the bank expects to tie itself up more or less permanently with its customers and to extend them continuous lines of credit, subject of course to some variations in amounts as seasons change. It certainly does not indicate a relationship in which the bank is merely to make temporary advances, extending each individual loan on its individual merits. Indeed, the sort of analysis required is not very different in its essentials from that made in connection with long-term credit extension. It should be added that this making of continuous loans does not in any way indicate insolvency on the part of the borrowers or that the analysis of the assets and liabilities has been faulty. The business may be solvent but unable to reduce all assets to cash without suspension as a going concern.

It is thus apparent that there are two ways of borrowing capital: one through the sale of stocks, bonds, short-time notes, etc.; the other by loans in perpetuity from commercial banks. As long as commercial banks have some cash resources constantly flowing in from deposits and some from payments of loans at maturity, and a good secondary reserve which can be converted into cash through the process of selling or borrowing from other banks as occasion demands, there appears to be no good reason why they should not make loans of a permanent nature¹ to well-organized and carefully managed businesses.

THE BANKING SYSTEM AND WORKING CAPITAL

A much clearer understanding may be gained of the relation of commercial banks to the supply of working capital if we now shift our attention from the individual commercial bank to commercial

¹ It should be recalled here that the loans thus made are used in the general business and are hence not exclusively working capital. The validity of the distinction between working and fixed capital under the conditions of modern business will be discussed in another connection.

banks in general. It will be found that the banking *system* very emphatically furnishes permanent working capital to business. The annual liquidation of his indebtedness which a borrower makes with his individual bank is often but nominal so far as the system as a whole is concerned; he may pay his loans to a given bank without reducing the loans of the banking system in general. For instance, it is often convenient to have two bankers and settle with one by borrowing from the other. This practice has been very common in the past, though it appears to have been much reduced in recent years.

A more common device is that of borrowing the funds to liquidate with one's own bank through the intermediation of a commercial paper house. It should be noted that to accomplish the desired results it is not necessary to wait until the maturity of the loan and then borrow through a broker the funds to pay the matured loans; it may be accomplished gradually. If a loan is due in November, one can borrow in September through a commercial paper house funds to be devoted to new financing while preparing to meet the payment at the bank in November from maturing trade bills. I should not wish to make too strong a statement in this connection, for it is not a universal custom; nor do I wish to be understood as condemning the practice. It is merely an evidence of the continuous need for borrowed funds in many lines and of the practical necessity for the commercial banks as a whole to make permanent loans to such businesses. In many cases it is impossible for a business to turn sufficient of its assets into cash at one time to liquidate its entire short-term indebtedness to banks without seriously deranging its affairs and producing a chain of unfortunate effects throughout related industries. Non-seasonal industries must borrow continuously from banks, periodically shut up shop, or else confine their operations to a cash basis.

A concrete illustration of the inability of the great staple lines to liquidate their obligations with banks as a whole may be taken from the packing industry. Loans to packers had always been considered extremely liquid, and when, in 1907, the Chicago banks were desirous of replenishing their reserves they asked Mr. Armour to liquidate his loans. Mr. Armour replied, "What! I who am liquidating the country and taking the cattle, sheep, and hogs that

are being daily sent to market to liquidate bank loans! I who am pushing pork and beef over to Europe for money, must curtail! Gentlemen, I am the liquidator! What would be the condition of your bank loans if I turned these cattle back to the farms?"¹

Now it is true that any particular packing-house note is liquid. It will be paid whenever a bank desires—even before maturity, it is said, as a matter of accommodation to a bank in need of funds. But such payments are largely effected through a shifting process, for the loan from bank A that is paid promptly reappears as a loan from bank B, the company having borrowed from bank B through the intermediation of a commercial paper house.² Attention should be directed at this place to the fact that it is usually understood between the commercial paper house and the borrower that if it is inconvenient for the latter to pay with his own funds the note when it matures, or if he does not or cannot borrow the means from his own bank, the broker will secure for him a new loan elsewhere. Although the payment of such loans is thus usually effected by means of new borrowing elsewhere, with the result that no reduction in the total of credit extended by banks is secured, there has nevertheless been a replenishment of resources as viewed from the standpoint of individual banks.

But while any particular packing-house loan is thus liquid, it is an entirely different matter when it comes to liquidating all of them at once. Banks—if not a single bank—furnish permanent working capital to the packers, and it would be impossible for the packing-houses to liquidate all their loans without disrupting the entire live-stock industry. According to Mr. Armour's testimony no very considerable reduction of packers' loans from banks can at any time be effected.

¹ Quoted by C. W. Barron, *op. cit.*

² It may be noted here that in borrowing permanent working capital from the commercial banks the packers are enabled to secure funds for continuous use at lower rates than would be possible if they borrowed these funds through the issue of bonds or short-term notes. In normal times the packers would have to pay a rate of interest on bonds or short-term notes of 5 per cent or more. But when they borrow the same funds from the commercial banks they are enabled to get them in ordinary times for about 4 per cent. Commercial banks will make their most favorable rates to the packers because from the point of view of any given bank a packing-house note when purchased through a commercial paper house is unusually liquid by virtue of the willingness of the packers, as indicated above, to pay the loan even before maturity if desired.

Table III shows the maximum and minimum indebtedness to banks of a representative list of concerns which borrowed through

TABLE III
MAXIMUM AND MINIMUM INDEBTEDNESS OF TYPICAL BORROWERS THROUGH
COMMERCIAL PAPER HOUSES*

	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.
	Packer No. 1		Packer No. 2		Department Store		Manufacturer of Farm Machinery	
1913...	2,000	280	800	.....	.....	.....	.....	.....
1914...	1,120	80	900	275	.....	.....	.....	.....
1915...	3,915	1,375	1,600	100	400	300	.....	.....
1916...	3,720	2,280	1,000	.....	575	350	100	.....
1917...	8,117	4,425	1,510	250	650	300	300	.....
	Wholesale Dry Goods No. 1		Wholesale Dry Goods No. 2		Wholesale Dry Goods No. 3		Underwear Manufacturer	
1913...	400	.....	570	95	885	200	.....	.....
1914...	500	.....	250	100	745	440	50	.....
1915...	950	300	285	125	1,435	345	40	15
1916...	1,000	400	650	.....	1,650	975	100	.....
1917...	1,200	200	765	120	2,735	990	240	25
	Automobile Manufacturer		Auto Tires, All Kinds of Rubber Goods		Surgical Supplies		Fuel, Ice, and Building Material	
1913...	.....	.....	.....	.....	.....	.....	.....	.....
1914...	.....	.....	781	.....	60	.....	.....	.....
1915...	.....	.....	2,205	.....	.....	.....	.....	.....
1916...	.....	.....	4,815	2,815	220	30	435	175
1917...	4,700	1,200	6,655	4,315	767	50	392	142
	Mail Order House		Dealer in Raw and Dressed Fur		Tanner		Manufacturer of Furniture	
1913...	.....	.....	355	15	560	210	.....	.....
1914...	1,455	330	335	85	450	150	15	.....
1915...	765	535	210	85	490	335	65	.....
1916...	755	545	245	180	630	305	300	90
1917...	1,060	610	395	135	1,080	420	360	215
	Wholesale Grocer		Manufacturer of Soaps and Perfumes		Wholesale Spices and Coffee		Woolen Manufacturer	
1913...	1,605	980	602	260	.....	.....	2,690	.....
1914...	1,165	415	630	297	400	140	800	.....
1915...	965	420	317	100	380	115	3,435	880
1916...	1,240	475	150	75	420	130	4,600	1,425
1917...	1,635	790	475	140	270	152	5,545	2,900

*The figures represent dollars, 000 being omitted from each amount. The names of the various companies were furnished on confidence, hence they cannot be published.

commercial paper houses during the last five years. Most of them are large concerns. The list of concerns given has been chosen at random and may be fairly regarded as typical. These figures do not tell the whole story because they do not show the total borrowings of these concerns from all sources, which would include both their own banks and commercial paper houses. It is not improbable that in some cases the partial liquidation that takes place is effected by larger borrowings at that time from their own banks. This possibility, however, should not be emphasized too strongly, for there are undoubtedly some seasonal variations in most of these lines. The figures as they stand, however, show conclusively that most businesses do not annually liquidate their indebtedness to banks.¹

It is apparent from the foregoing analysis that with any particular bank a not inconsiderable percentage of the so-called commercial loans are periodically renewed. It is clear also that the theory that commercial banks make only temporary advances to business men, that they do not furnish them with permanent working capital, is ill founded in fact. In a great many lines of business individual commercial banks supply permanent working capital to their customers, while the commercial banking system supplies permanent working capital to most lines of industry. The erroneous doctrine that has prevailed in this connection is attributable partly to ignorance of banking practice and partly to the method commonly employed in banking study of isolating the individual bank for consideration and ignoring the existence of the banking system.²

¹ It is worthy of note in this connection that it has also been the theory that borrowers should "clean up" at least once a year with commercial paper houses as well as with their own banks. It should be stated here, however, that the great rise of prices since 1914 has tended to increase the minimum indebtedness.

² In connection with this question of permanent or continuous loans of working capital it would be interesting to know to what extent the total of unsecured loans made by all commercial banks varies from one call of the comptroller to another. Data on this point are, however, not available. Do the periods of heavy demand in certain trades coincide with periods of slack demand in others so that the total of all such loans varies but little? Accurate data on this question would undoubtedly show wide variations in the totals for particular banks and considerable variations for different sections of the country in consequence of seasonal changes;

Finally it should be emphasized that in ordinary times the problem of liquidity is not a problem of maturing loans so much as it is a problem of shifting assets to other banks in exchange for cash. If one bank can always get help from another in case of trouble, there is no necessity of relying upon maturing loans. In fact, it is now everywhere recognized in banking circles that the way to attain the minimum in the matter of reserves is not by relying upon maturities¹ but by maintaining a considerable quantity of assets that can be shifted to other banks before maturity as necessity may require. Liquidity is tantamount to shiftability.

VI. LIQUIDITY IN TIMES OF CRISIS

On the occasions of great financial strain or crisis the problem of converting assets into cash is very different from what it is in ordinary times or in periods of seasonal stress. Again basing our conclusions on banking experience before the passage of the Federal Reserve act, we find that in time of crisis almost none of the assets of our banks are liquid in the sense that maturing obligations can be used to replenish reserves, and that so far as there is any liquidity at all it is the result of inter-bank accommodations.

Let us consider first the commercial paper of customers. When a crisis has reached an acute stage, it is absolutely impossible for a bank to compel any considerable number of loans to its customers to be paid. Renewals are certain to be almost universally demanded. Indeed it is a very first principle that the bank's customers must be "carried" in a time of stress. Moreover, there is

as, indeed, the statistics of currency movements reveal. But for all commercial banks, in a country of so vast an area and of such diversity of occupations as the United States, it is doubtful if any great variations in the total of non-collateral loans would be shown during the course of any normal year. The statistics for all loans, secured as well as unsecured, from one *call* to the next show remarkably little change—a fairly steady growth in the total of the *loans* item marking the successive abstracts of condition. This cannot be used to prove anything, however, since the variations in the demand for commercial funds might merely be offset by corresponding and resulting variations in the amount of speculative collateral loans.

¹ In the case of purchased paper we shall later see that the payments at maturity to bank A are usually made possible by increased loans from bank B. See below, pp. 724-25. Under the Federal Reserve System it is of course apparent that liquidity is a question of shiftability to the Federal Reserve banks.

an enormously increased demand for accommodation at such a time. It is a mere truism that the fundamental need in time of crisis is to expand loans, for to contract them is to precipitate a panic at once. It is one of the most surprising of the many inconsistencies in financial literature that so many writers insist upon the need for expanding loans in time of crisis and yet argue in other connections that commercial paper is a liquid asset which is indispensable for the safety of the credit structure in periods of acute financial strain.¹

Banks have long recognized the utter unreliability of commercial loans to customers as a secondary reserve for crises, and have in various ways attempted to substitute other assets for commercial paper as the secondary reserve. Paper bought through brokers has enjoyed much vogue in recent years. Many banks with such paper maturing during the crisis of 1907 obtained cash through its payment at maturity. Of course a practical difficulty in connection with such paper is a lack of knowledge as to when a crisis is to occur. Without such knowledge the number of maturities during the crisis period is a mere matter of chance. It is to be noted, moreover, that from the standpoint of the entire banking system such payments in no wise reduce the total bank loans. Bank X, in Chicago, having purchased paper from Mr. A, in Pittsburgh, receives through its payment an increase of cash resources. But is there any more reason for believing that Mr. A is in a better position to liquidate his business than he would have been had he secured this loan from his regular Pittsburgh bank? No, he must be carried by banks somewhere, if not by bank X, in Chicago. To pay his loan in Chicago A is therefore compelled to borrow from his regular Pittsburgh bank,² and so far as the banking system as a whole is concerned there has been no liquidation of indebtedness. Only in so far as this bank in

¹ That this notion has in no wise been allayed is clear from a perusal of recent financial articles and of the *Federal Reserve Bulletin*. Since the discussion attending the passage of the Federal Reserve System it appears to have become an *idée fixe* that commercial paper is self-liquidating, even in times of crisis, and that investment paper is seldom if ever liquid.

² The broker's agreement to sell A's notes elsewhere of course can seldom be kept in a time of crisis because the market for such paper is then stagnant. A's only recourse, therefore, is to seek accommodation from his regular bank.

Pittsburgh might chance to be less hard pressed than the bank in Chicago would this shifting of indebtedness be of benefit.¹ We may conclude, therefore, that purchased paper is little better than any other commercial paper when viewed from the standpoint of the banking system rather than from the standpoint of any single bank.

Time collateral loans have never been regarded by the banks as particularly liquid in time of crisis. In only a few cases would it be possible for borrowers to pay at maturity such loans as chance to mature during the period of stress. True, a bank has the alternative of selling the collateral rather than renewing the loan (though fear of losing a customer is often a strong deterrent to such action), and there is a slight advantage in this—dependent of course upon the extent to which such collateral can be disposed of in the market. But as the problems here are identical with those connected with call loans the two may conveniently be treated together.

It took a long experience indeed for the New York banks² finally to realize that call loans possess no considerable convertibility into cash in time of crisis. As viewed by the individual bank, call loans appeared to possess ideal liquidity, being terminable at the will of the bank and safeguarded by an ample margin of readily marketable securities. This situation, as we have seen, gives in ordinary times a large amount of flexibility to the banking system, but in time of crisis it is powerless to give any considerable relief. Usually the borrower on call cannot pay in time of crisis, and the banks therefore must attempt to sell the collateral. But when all banks are endeavoring to sell collateral and none wish to buy,³ the

¹ It is to be noted in this connection also that the more universal this practice of holding "purchased paper" as a secondary reserve becomes the less possible does it become for all banks to procure funds from its payment at maturity. When only a relatively few banks have such paper, they may replenish reserves by drawing the funds from other banks. The more nearly all banks come to rely upon this device the less can each gain thereby.

² The call-loan market exists only in New York, but the whole banking structure has been in considerable measure dependent upon it owing to the concentration of cash resources in New York, which are callable at the option of depositing banks.

³ Individuals are in a temper to buy few bonds or stock at such a time, and to the extent that they do buy they must draw the funds for the purpose from some banks somewhere in the system.

market for securities is automatically rendered stagnant. The experience of 1907 is too well known to require further statement on this point.

Investment in bonds for a secondary reserve for crises has also had its period of popularity in banking circles, and its impotence has been but slowly revealed, owing to the persistence with which most bankers refuse to look at the system as a whole. Such investments are of course practically analogous to collateral; they can be disposed of only to other banks. When all banks are subjected to pressure for heavy additional accommodations, the relief that can thus be afforded is virtually negligible.¹

Our own banking experience, as well as that of all other countries, has taught with the greatest possible conclusiveness that ability to pass through a crisis without suspension of specie payments and widespread credit disruption rests not upon the ability of the banks to convert assets into cash—that is, upon the liquidity of bank assets. It rests upon the ability either to draw upon unused reservoirs of reserves or to create new forms of reserve money that can be used as a basis for an expansion of loans. When once an acute crisis has developed, a panic can never be averted by liquidation. It is true that after our panics the liquidation that was effected, or the replenishment of bank reserves that soon occurred, resulted more largely from a payment of commercial loans that were then not renewed than from a reduction of the investment loans of commercial banks, but this is quite a different problem. Liquidation of commercial loans after a panic is not a means of preventing panic; indeed it is rather a liquidation that has resulted from the rude shock to business enterprise that the panic itself caused.

Let us see, however, if in the initial stages of a developing crisis commercial loans may not afford a means of retrenchment that will insure a return to normal conditions without an interregnum of financial disaster. If a conservative commercial loaning policy is pursued by the banks at such a time, the result is, first, a larger margin of reserves in the banks, and, secondly, a reduction

¹ See Hollander, "Security Holdings of National Banks," *American Economic Review*, III (1913), 793-814.

in the volume of output of industry—a general slowing down of the existing productive equipment of society, and hence of the flow of goods from producer to consumer. The first of these results places the banks in a better position to stand a subsequent heavy strain. The second is supposed to reduce the danger of subsequent tension or commercial crisis. A rapid reduction of commercial loans, however, is certain to meet with strong opposition from the business world, whose tone is so characteristically optimistic in times of expansion. Many business men may be found who will counsel a less rapid rate of expansion of business; but there are few indeed, even among bankers, who would wish an actual reduction. Moreover, from the standpoint of those in control it is recognized that a rapid reduction in the volume of business is likely to do much harm by virtue of its very suddenness. The proof that substantial liquidations have seldom been effected through the agency of the banking machinery when the economic cycle is on its strong upward swing is found in the fact that expansion generally proceeds in the absence of fortuitous events to the stage of acute crisis—when financial disruption may be avoided only by a rapid expansion of accommodations, leaving the liquidation to be automatically achieved in the period of depression which follows. 2X.

Under decentralized, independent banking it has never been possible for banks to avert a crisis through a restriction of commercial loans. And in the countries that have had centralized control it has usually been only the panic stage that has been avoided—and this by a temporary expansion of loans, or at least a declaration that all desiring loans for legitimate commercial purposes would be accommodated. True, the raising of the interest rate discourages unnecessary borrowing at the same time that it attracts additional reserve money from other countries; but this in practice has more often been an alleviative rather than a preventive of a critical condition.

The increasing of the interest rate as a means of preventing crises merits further discussion. It is obvious that if our Federal Reserve Board should be far-visioned enough to note the signs of a crisis a year or so before its actual occurrence the interest rate could be raised sufficiently to halt the crisis in its incipient

stages. Now it is assumed in current arguments on the liquid nature of commercial paper that it is only through commercial loans that our banks may bring such a retrenchment. Let us see. The curtailing of commercial loans results in lessening the volume of output of the existing capital equipment of society; it causes factories to run on part time and thereby reduces the flow of commercial goods from producer to consumer. We can in this way call a quick halt to trade; but it must be recalled that in the exercise of the assumed foresight we are interested, not in quick retrenchment, but rather in a gradual lessening of the rate of expansion. And this rate of expansion is more a problem of industry than of commerce. That is to say, business recovery from a period of depression is at first a matter of speeding-up existing equipment, but it soon becomes a matter of new construction of fixed capital; and incipient trouble would seldom arise until this stage of new building was well under way. If restriction of commercial loans, therefore, is to secure a real liquidation of business, it must slacken the rate of *industrial* expansion so that after an interval the fixed capital of society will have been readjusted to industrial requirements. Now a checking of commercial loans by raising the interest rate will shortly produce this result; for if existing equipment cannot find full employment new enterprise will be halted because of a lack of profit incentive.

But could not the same result be accomplished through a restriction of investment loans directly? Certain short-term investment loans are paid, from time to time, as we have seen, and a certain percentage of long-term investments is moreover always falling due. There is also a normal growth of investment business that is ordinarily financed by commercial banks. Suppose now that in a period of great expansion loans for this new financing are refused, or at least kept within conservative bounds. Would we not thereby secure a retardation of the rate of industrial expansion quite as well as before? Could not the development of new capital be thus checked without first restricting the output of existing equipment? Although without strong convictions in this connection I venture a tentative opinion that such a method would effect the desired readjustment with less shock and hence

more satisfactorily than would the method of curtailing commercial loans.

In practice, however, reliance need not be placed entirely on such a method of restriction. If the foresight of the Federal Reserve Board proves at any time to have been inadequate to accomplish the desired retrenchment by a curtailing of investment, and a critical condition in consequence develops, the opportunity of raising the rate on the commercial loans still affords a means of suddenly applying the brakes; for commercial banks supply loans for commercial purposes even when they are at the same time making loans for investment uses. It would seem therefore that the doctrine that commercial banks should confine their activities largely, if not exclusively, to commercial loans as a means of avoiding undue expansion of industry is ill advised.

This discussion of the relation of commercial loans to the economic crisis touches at one point the problem of the economic cycle. It should be borne in mind by the reader, however, that no attempt has been made here to study the general theory of business cycles. The argument given is merely a refutation of the doctrine that it is only by a curtailment of commercial loans that the business pace may be slackened through central control of the interest rate. It should perhaps be stated also that the present analysis has no bearing upon the causes of trade expansion or depression. May it be added here also that the widespread doctrine that investment loaning by commercial banks is the prime cause of financial crises does not square in the least with Mitchell's theory of business cycles?

VII. RECAPITULATION

The argument of this and the preceding article¹ may be recapitulated as follows:

1. The commercial banking system advances funds to the business world for both working and fixed capital uses. The statistics of all commercial banks show that something like 50 per cent of all *loans* is devoted to investment uses; and that in the neighborhood of two-thirds of all the credit extended by commercial banks goes for fixed rather than working capital.

¹ *Journal of Political Economy* (June, 1918), pp. 484-508.

2. In the process of making loans for both fixed and working capital uses the mechanism of commercial banking makes possible an expansion of cash resources in the ratio of approximately 16 to 1.

3. The problem of maintaining liquidity in ordinary times may be summarized as follows: (a) An individual bank does not place reliance to any great extent upon maturing obligations; liquidity is rather a matter of shifting assets to other banks in exchange for reserve funds. The result of this practice is to enable banks to maintain solvency with a much smaller ratio of reserves than would otherwise be necessary. (b) The commercial paper of a bank's own customers is thus among the least reliable forms of secondary reserve. It cannot be counted upon to furnish a steady inflow of funds from payments at maturity; it cannot readily be shifted to other banks. (c) Paper purchased through commercial paper houses is more reliable, owing to the practice of never granting renewals. Indirectly it thus enables any given bank to secure funds at date of maturity. (d) Among the most shiftable, and hence among the most liquid, of assets are bonds and stocks, both as direct investments and as collateral. The development of the corporate form of enterprise has largely undermined the theory of commercial banking as elaborated to fit the conditions of early nineteenth-century England. The share and bond as claims to fixed capital have a ready transferability; indeed the active securities that are listed on the exchanges have in normal times an almost instantaneous convertibility into cash. The result is that securities are from the standpoint of any individual bank incomparably more liquid in ordinary times than commercial paper of customers—assuming that no special machinery, such as reserve banks, has been developed to permit the same shifting of commercial paper.

4. The conclusions on the question of liquidity of bank assets in time of crisis are as follows: (a) none of the forms of bank assets can be counted on to furnish an inflow of funds at the banks through payment at maturity. (b) Because of the heavy demands of additional loans from customers everywhere, and the general depletion of bank reserves, little shifting of assets is possible. (c) A time of crisis reveals that the banks are tied up in a system;

that the banks as a whole must carry business as a whole; and that when the strain on all banks is heavy, the additional reserve funds required can be secured only by attracting them from other countries or by the manufacture of new forms of reserve money.

5. A curtailment of commercial loans through high interest rates has no advantage over a curtailment of investment loans as a means of checking the rate of industrial expansion in the incipient stages of a crisis. In any event the existence of investment loans does not preclude the possibility of checking expansion by curtailing commercial loans.

6. As by-products of this study of liquidity we find that individual commercial banks not uncommonly supply permanent working capital to their customers and that the commercial banking system, through the shifting process described, supplies permanent working capital to most lines of industry.

The broader conclusions that are to be drawn from this entire study of the nature of modern commercial banking cannot be briefly indicated. It may merely be stated here that this analysis has a very important bearing upon the theory underlying the Federal Reserve act and upon the practical policies that are being formulated by the Federal Reserve Board; and that it may be made to throw some light upon that important problem of general economic theory, the rapidity with which society as a whole makes provision for the future through the formation of capital goods.

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[*To be continued*]

NOTES

OUR TRADE BALANCE AND OUR FOREIGN LOANS

The world-trade of 1917 measured in values has in all probability made its highest record. The extraordinary prices which have characterized all classes of merchandise since the beginning of the present European war, and especially during the past year, account in large measure for this showing. Measured in actual freight tonnage it is probable that the commerce of 1917 fell behind that of some of the most active trading years before the outbreak of the conflict across the Atlantic.

TABLE I
EXPORTS AND IMPORTS OF MERCHANDISE DURING THE YEARS
1912 TO 1917 INCLUSIVE

Calendar Year	Exports	Imports	Excess of Exports over Imports
1912.....	\$2,399,217,993	\$1,818,073,055	\$ 581,144,938
1913.....	2,484,018,292	1,792,596,480	691,421,812
1914.....	2,113,624,050	1,789,276,001	324,348,049
1915.....	3,554,670,847	1,778,596,695	1,776,074,152
1916.....	5,482,641,101	2,391,635,335	3,091,005,766
1917.....	6,231,244,976	2,952,467,955	3,278,777,021

The share of the United States in the commerce of the world has increased materially during the last four years. The published figures of our exports and imports for the calendar year 1917 show a total in values more than double that of any year preceding the outbreak of the present war in Europe. The changing relations of foreign trade growing out of this struggle are profound and have great significance for the commerce of the future. To a considerable extent the United States is buying and selling abroad in new markets and along new trade routes. New commercial relations are being formed which bid fair to become permanent.

A significant feature of our trade expansion during the last three years has been an enormous increase in the excess of exports of merchandise over imports—or a marked addition to our so-called “favorable balance of trade” as shown by Table I.¹ According to the figures tabulated the excess of exports over imports in 1917 was nearly six times

¹ *Monthly Summary of Foreign Commerce* (October and December, 1917), p. 4.

what it was in 1912, nearly five times that of 1913, and more than ten times that of 1914. The excess in 1917 was probably greater than that indicated by the figures in the table, as quantities of merchandise, including war material, food, and clothing, were sent out of the United States by the government for the use of our troops in Europe, and such material, when passing out of the country on our own transports, goes without being recorded.¹ The same is true of articles which the government may be importing in the same manner, although these are probably much less than the outgoing merchandise.

"INVISIBLE" ELEMENTS

The debits and credits of the United States in its account with the world are composed, not only of visible exports and imports of merchandise and of gold, but also of less tangible elements which have been called "invisible exports and imports." What is popularly known as the balance of trade is made up of the values of merchandise exported and imported—a common and deep-seated assumption being that a surplus of exports will be accompanied or followed by a corresponding surplus of imports of gold. The interchange of services between nations—as, for example, the transportation of goods from and to a country by the merchant marine of another, or the services rendered by foreign capital—are usually ignored in published statements of a nation's trade balance. These less tangible but very real elements, while usually impossible of exact or even approximate measurement, figure prominently in the determination of our present very large surplus of exports over imports. The items which enter into our account with the world are stated in the following tabulation:²

EXPORTS (Which make the supply of foreign exchange)	IMPORTS (Which cause the demand for foreign exchange)
Visible exports Merchandise Gold Invisible Exports Investments (including purchase of stocks and bonds) by foreigners in the United States	Visible imports Merchandise Gold Invisible imports Investments (including purchase of stocks and bonds) by Americans in foreign countries

¹ O. P. Austin, Statistician, National City Bank, in *New York Evening Post* (December 31, 1917), sec. 5, p. 1.

² Johnson, *Money and Currency*, pp. 91-102. On p. 101 Professor Johnson has a statement of the credits and debits of the United States in its account with the world which the writer, with some modification, has followed.

EXPORTS (Which make the supply of foreign exchange)	IMPORTS (Which cause the demand for foreign exchange)
Interest, dividends, and profits on American investments abroad	Interest, dividends, and profits on foreign investments in the United States
Reduction of American bank bal- ances abroad	Reduction of foreign bank balances in the United States
Increase of foreign bank balances in the United States	Increase of American bank balances abroad
Foreigners in the United States (in- cluding tourists, ambassadors, etc.) drawing incomes from abroad	Americans abroad (including tour- ists, ambassadors, etc.) drawing incomes from the United States
Ocean freights paid Americans by foreigners	Ocean freights paid foreigners by Americans
Any extraordinary indemnity or subsidy from foreigners to the United States or sales of public property by the United States to foreigners	Any extraordinary indemnity or subsidy to foreigners by the United States or purchase of pub- lic property by Americans

The items listed under the head of exports make for the supply of foreign exchange and may be considered on the credit side of our account with the world, and those listed under the head of imports cause the demand for foreign exchange and may be regarded as forming the debit side of the account. Among invisible exports and imports, stocks and bonds bought in foreign markets by Americans would create a demand for foreign exchange in the same way as imports of merchandise or of gold, and would tend to stimulate the export of merchandise. Interest paid on such investments by foreigners would help to increase the supply of foreign exchange in the same manner as the export of merchandise, and would tend to stimulate the importation of merchandise.

The "invisible" items which have figured most prominently in the years immediately preceding the war in this account have been investments by foreigners in the United States, investments by Americans abroad, incomes of foreigners on investments already made in the United States, incomes drawn from the United States by Americans living or traveling abroad, and ocean freights paid by Americans to foreigners. All but the first appear on the debit (import) side of our account and create a demand for foreign exchange which in turn tends to increase our export trade. Investments by Americans in foreign industries and public utilities like railroads and traction companies in the years immediately preceding the outbreak of war were probably as great and as

frequent as similar investments by foreigners in the United States.¹ The returns on foreign investments in the United States have hitherto been much larger than returns on American investments abroad. In the past there have been more Americans living and traveling in other countries and drawing incomes from the United States than foreigners living or traveling in this country and receiving incomes from abroad. Before the war only about 10 per cent of our exports and imports were carried in American vessels, necessitating the payment of large ocean freights to foreigners. Our large surplus of exports over imports, amounting each year to several hundred million dollars in the years immediately preceding the war, were thus counterbalanced by a less tangible, but none the less real, surplus of foreign services to American industries or American life.

THE MOVEMENT OF GOLD

The movement of gold was, in general, away from the United States, although in some years the excess of exports of merchandise over imports was met in part by a large surplus of gold imports.² Since the beginning

TABLE II
IMPORTS AND EXPORTS OF GOLD

	Imports	Exports	Excess of Imports
1915.....	\$451,954,590	\$ 31,425,918	\$420,528,672
1916.....	685,990,234	155,792,927	530,197,307
1917.....	552,454,374	371,883,884	180,570,490

of the conflict in Europe there has been a strong movement of gold to this country. The excess of exports of merchandise over imports for the three calendar years 1915, 1916, and 1917, as recorded by the Bureau of Foreign and Domestic Commerce, aggregated the enormous sum of \$8,145,856,939. A part of this surplus, though a small part, was paid for in gold. The imports and exports of gold for the three years mentioned are given in Table II.³ The unusually heavy importation

¹ Attention was frequently called to such investments in certain financial and commercial publications like the *New York Journal of Commerce*. American capital flowed into the West Indies, Mexico, and other parts of Latin America.

² In the fiscal years 1880, 1881, 1898, and 1908 the excess of gold imports over exports was very large. In a few other years it was considerable.

³ *Monthly Summary of Foreign Commerce* (October, 1917), p. 4, and *Preliminary Statement of Exports and Imports* for the year 1917.

of gold, especially during the years 1915 and 1916, paid for over \$1,100,000,000 of our surplus exports of merchandise during the three years named.

RETURN OF AMERICAN SECURITIES

The most conspicuous feature of our trade balance and the one of greatest significance for the future has been the return to the United States of securities in American industries formerly held by foreigners, coupled with a great increase in investments by Americans in foreign securities—largely, but not wholly, war loans. The extent to which investments by foreigners in American industries have been reduced since the outbreak of hostilities cannot be stated with any degree of accuracy. Four compilations by President Loree of the Delaware and Hudson Company show that nearly 60 per cent of the foreign holdings of American railroad securities was returned to this country in the two years 1915 to 1917. These figures embrace the securities of 144 railroads—all the roads in the United States over one hundred miles in length. The computations were dated January 31, 1915; July 31, 1915; July 31, 1916; and January 31, 1917. They are tabulated in Table III.¹

It is to be noted that on January 31, 1915, there were \$2,704,402,364.42 (par value) of railroad securities held abroad, and on January 31, 1917, \$1,518,590,878.26 had been returned to this country, leaving on the latter date \$1,185,811,486.16 still held abroad. The market values of the securities returned between the two dates mentioned cannot be stated, as the market values of the securities held abroad on January 31, 1915, were not determined. Between July 31, 1915, and January 31, 1917, the market value of the railroad securities held abroad had been reduced from \$1,751,437,912.50 to \$924,542,646.19.

These compilations of President Loree are the only ones determining with any degree of exactness the return to this country of securities held in foreign lands during any part of the war period, and these compilations embrace only railroad securities for a period of two years. The movement had doubtless begun before the first compilation had been made and has probably continued since the last was completed. Railroad securities probably formed the greater part of the American corporate holdings abroad² when the war broke out in Europe, but

¹ The figures were furnished the writer through the courtesy of President L. F. Loree and the National City Bank of New York.

² The assistant vice-president of the National City Bank of New York so stated in a letter to the writer in January, 1918.

TABLE III

RAILROAD SECURITIES HELD ABROAD, JANUARY 31, 1915; JULY 31, 1915; JULY 31, 1916; AND JANUARY 31, 1917

Class of Security	Par Value*	Market Value†
Preferred stock.....	\$ 204,304,400.00 163,129,850.00 120,597,750.00 91,006,300.00	\$ 117,863,393.01 93,816,715.00 61,358,921.25
Second preferred stock.....	5,558,150.00 5,608,850.00 4,858,650.00 4,645,100.00	2,115,415.00 2,000,256.00 1,724,583.00
Common stock.....	573,880,393.00 511,437,356.25 336,761,704.00 285,729,918.75	342,225,958.00 234,154,103.00 184,985,417.95
Notes.....	58,254,390.16 24,632,291.93 9,070,955.00 8,475,650.00	22,574,283.93 6,844,240.00 7,966,437.50
Debenture bonds.....	187,508,310.00 160,288,700.00 74,796,900.00 56,752,080.00	141,444,593.00 69,858,284.00 53,714,158.25
Collateral trust bonds.....	282,418,415.26 180,590,850.00 85,166,470.00 57,776,380.00	136,422,185.75 66,526,692.00 51,600,784.95
Mortgage bonds.....	1,371,156,851.00 1,150,339,130.00 774,793,834.00 672,969,224.08	962,081,613.26 628,183,797.00 554,787,819.46
Equipment trust bonds.....	20,233,455.00 25,253,201.00 7,788,300.00 7,449,833.33	24,480,410.55 7,015,683.00 7,397,983.83
Car trusts.....	29,000.00 836,000.00 49,000.00	29,060.00 681,320.00 48,540.00
Receivers' certificates.....	908,000.00 2,201,000.00 958,000.00 958,000.00	2,201,000.00 958,000.00 958,000.00
Total.....	\$2,704,402,364.42 2,223,510,229.18 1,415,628,563.00 1,185,811,486.16	\$1,751,437,912.50 1,110,099,090.00 924,542,646.19

* The figures are in order, January 31, 1915; July 31, 1915; July 31, 1916; and January 31, 1917. The market values for January 31, 1915, were not determined, and hence the first figure in each case is of July 31, 1915.

† No figure for January 31, 1915.

ownership by foreigners in stocks and bonds of mining and manufacturing companies of the United States have not been small. The return of securities of such concerns must have been considerable, and they have added appreciably to the total of all securities which found their way back to the United States since the beginning of the war.

LOANS BY THE UNITED STATES

Loans floated in the United States by foreign nations, both belligerents and neutrals, reveal another side of the same phase of our trade account with the world. Between August 1, 1914, and December 31, 1916, the loans raised in the United States by foreign countries were estimated to reach \$2,325,900,000, of which \$175,000,000 had been repaid.¹ The net indebtedness on January 1, 1917, was therefore \$2,150,900,000. The loans may be classified geographically as follows:

Europe.....	\$1,893,400,000
Canada.....	270,500,000
Latin America.....	157,000,000
China.....	5,000,000
<hr/>	
Total foreign loans.....	\$2,325,900,000
Less amount paid, estimated.....	175,000,000
<hr/>	
Net foreign indebtedness.....	\$2,150,900,000

Of the loans to Europe only \$35,000,000 represents advances to neutrals. Of the loans to the belligerent countries of Europe only a small fraction has been made for other than war purposes. About \$120,000,000 of the Canadian issue was a war loan. Altogether it appears that approximately \$1,900,000,000 in war loans alone had been placed in the United States by January 1, 1917.²

The loans of the belligerent countries which were floated in the United States up to the close of 1916 are divided as follows:

Great Britain.....	\$ 908,400,000
France.....	695,000,000
Russia.....	160,000,000
Germany.....	45,000,000*
Canada.....	270,500,000
<hr/>	
	\$2,078,900,000†

* Estimated.

† Nearly \$1,900,000,000 of this constituted war loans.

¹ *New York Journal of Commerce*, January 2, 1917.

² *Ibid.*

Any estimate of German indebtedness is uncertain, as it was impossible to obtain figures as to the sale of German war bonds. Furthermore, it is probable that banking credits advanced to German interests will never be fully ascertained. Owing to the operations of the British black list and the fact that shipments to Germany have not been direct, but through neutral countries, such transactions have necessarily been not only private but secret.

Since the opening of the year in which the United States entered the war there have been issued \$250,000,000 United Kingdom of Great Britain and Ireland one- and two-year $5\frac{1}{2}$ per cent notes, of which \$100,000,000 matured and was paid February 1, 1918; \$100,000,000 Government of the French Republic $5\frac{1}{2}$ per cent secured convertible notes; \$80,000,000 Dominion of Canada notes; and approximately \$315,000,000 additional, including British government ninety-day treasury bills.¹ These amounts, minus the notes matured and paid, aggregate approximately \$645,000,000. These sums do not of course include loans made by the United States government to her Allies since her entrance into the war.

In addition to the foregoing issues loans have been made by the government of the United States to foreign countries.

By the acts of Congress of April 24, 1917, and September 24, 1917, authority was vested in the Secretary of the Treasury, on behalf of the United States, with the approval of the President, to establish credits in favor of foreign governments engaged in war with the enemies of the United States, and, to the extent of the credits so established, from time to time, to purchase at par from such foreign governments their several obligations.²

Such obligations under the authority of the act of April 24 are

to bear the same rate of interest and to contain in their essentials the same terms and conditions as those of the United States issued under the authority of the act, and under the terms of the act of September 24, to bear such rate or rates of interest, not less than the bonds of the United States, to mature at such date or dates, not later than the bonds of the United States then last issued under the authority of either act, and to contain such terms and conditions as might from time to time be determined by the Secretary of the Treasury.³

¹ Information furnished the writer through the courtesy of J. P. Morgan & Co., New York.

² *Annual Report of Secretary of the Treasury* (1917), p. 17.

³ *Ibid.*

A total appropriation of \$7,000,000,000 was provided for these purposes, \$3,000,000,000 by the earlier act and \$4,000,000,000 by the later.¹ Under these authorizations credits have been established in favor of the governments of Great Britain, France, Italy, Russia, Belgium, and Serbia. These loans, up to January 17, 1918, are given in Table IV.² On the basis of the requests being made on the Treasury, it is estimated that credits aggregating approximately \$500,000,000 per month will be required to meet the urgent war needs of the foreign governments receiving advances from the United States.³ At this rate approximately the entire appropriation authorized by Congress will be accredited to our Allies by the close of the present fiscal year (June 30, 1918).

TABLE IV

Country	Loans and Credits Agreed Upon	Loans Made	Balances Under Established Credits
Great Britain.....	\$2,045,000,000	\$1,985,000,000	\$ 60,000,000
France.....	1,285,000,000	1,225,000,000	60,000,000
Italy.....	500,000,000	450,000,000	50,000,000
Russia.....	325,000,000	187,729,750	137,270,250
Belgium.....	77,400,000	75,400,000	2,000,000
Serbia.....	6,000,000	4,200,000	1,800,000
Totals.....	\$4,238,400,000	\$3,927,329,750	\$311,070,250

A significant feature of the loans floated in this country in the last three and a half years has been the fact that many states and municipalities which formerly went to London to sell their securities have recently been financed through the United States. About \$150,000,000 of the Canadian loans went to provinces and municipalities,⁴ and many of the South American obligations were contracted for municipal improvements. The neutral nations of Europe have also sought accommodation in the American money market. Loans have been made to the city of Dublin, Ireland, the London Water Board, and the French cities of Paris, Bordeaux, Lyons, and Marseilles.⁵

¹ *Annual Report of Secretary of the Treasury* (1917), p. 17.

² Letter to writer from R. C. Leffingwell, Assistant Secretary of the Treasury, dated January 17, 1918.

³ *Annual Report of Secretary of the Treasury* (1917), pp. 17 and 18.

⁴ *New York Journal of Commerce*, January 2, 1917, and information furnished by J. P. Morgan & Co.

⁵ *New York Journal of Commerce*, January, 2, 1917.

Securities of industrial corporations and railroads in other lands have also been sold in this country to the extent of some hundreds of millions of dollars. Large investments have been made in Canadian and South American concerns.¹ We have no means of determining the extent of these investments, but the disposition of European capitalists to reduce their holdings in the securities issued by industrial enterprises in the New World, as shown in the return to this country of railroad securities held abroad, indicates that industrial enterprises in the newer parts of the Western Continent have probably been financed to a greater extent than formerly by American capital.

It will thus be seen that between August 1, 1914, and February 1, 1918, the loans floated by foreign governments in the United States still remaining due at the latter date were estimated at \$2,795,900,000. In addition to this amount the United States government had by the middle of January, 1918, made loans to her Allies aggregating \$3,927,329,750, with balances in their behalf under established credits of \$311,070,250. The return to this country in two years of over a billion and a half (par value) of American railroad securities² is a part of the same general movement which is transforming the United States from a debtor into a creditor country. The magnitude of this movement has made the transformation rapid.

FUTURE TENDENCIES

The establishment on a large scale of credits in this country in behalf of foreign nations and the flotation of foreign loans will probably continue during the period of the war. During the continuance of this "export of capital" the great surplus of exports over imports is likely to be a feature of our foreign trade. The interest on this investment which is already large and growing larger is on the credit side of our account with the world—making for the supply of foreign exchange and thus encouraging imports. The United States, as a creditor country with great investments abroad, will be in receipt of an income which will tend to show itself in a relatively larger import trade than has been the case for three or four decades. In other words, our highly "favorable balance of trade" will tend to be changed into an "unfavorable balance."

¹ *Ibid.*

² Some of these securities, especially mortgage bonds, are used as collateral for the security of foreign loans, but the greater part represent a permanent return to this country.

This transformation in our trade balance is hastened by another factor which is likely to be very potent if the war is of long duration. This factor is our mercantile marine engaged in foreign trade. Previous to the Civil War the American clipper ships were dominant in ocean transportation. In the years following that struggle steam supplanted sail on the ocean. Iron, and later steel, vessels took the place of wooden ones. A consequence of these changes was that the United States lost her place on the high seas, and only a small fraction of her foreign commerce was carried in vessels flying the American flag. Ocean freight rates were thus paid foreign vessel owners for services performed in the carriage of our exports and imports—these services figuring on the debit side of our account with the world and paid for, in part at least, by a surplus of exports over imports.

Since the outbreak of war in Europe the proportion of our foreign commerce carried in American vessels has greatly increased. Between June, 1914, and June, 1916, the gross tonnage of American vessels engaged in foreign trade increased from 1,076,152 to 2,191,715—or more than doubled. The percentage of our exports carried by this tonnage increased during the same period from 8.3 to 13.0, and of our imports from 11.4 to 22.5.¹ Since the United States entered the war a considerable part of our enrolled tonnage² has been registered for the foreign service. The destruction of ocean vessels by submarine activity and the construction of new shipping have combined to increase our proportion of the total carrying capacity of the ocean merchant marine of the world. The bulk of the tonnage destroyed has been British, French, Norwegian, and Dutch. The new construction of vessels in the United States and in Japan has been out of proportion to that of any other country except Great Britain.³ In the case of Great Britain the new tonnage constructed has been more than offset by tremendous losses. The United States thus bids fair at the end of the war to have on her hands the ships necessary to carry on a large part of her foreign commerce.

¹ *Statistical Abstract*, 1916.

² The "enrolled" tonnage is engaged only in domestic trade. Our registered tonnage represents that part of the American merchant marine engaged in foreign commerce.

³ On the Pacific there was a noticeable decline in the number and tonnage of American vessels operating in the transpacific trade during the first two and a half years of the war. See article by writer on "The War and Trans-Pacific Shipping" in *American Economic Review*, September, 1917.

With the huge loans made to foreign governments and industries coupled with a decline in the holdings of foreigners in American securities and the increasing importance of our mercantile marine in the commerce of the world, our "invisible exports" will figure to a greater extent in our commercial relations with other nations than heretofore. Like the exports of merchandise and of gold, they make for the supply of foreign exchange and will tend to stimulate the importation of merchandise. As a creditor country, the debt due us and the interest on that debt will be paid by a relatively greater increase of imports than of exports. Our present highly "favorable balance" of trade will tend to be changed into an "unfavorable balance." Our "invisible exports" will probably exceed our "invisible imports," with the balance made up by a corresponding excess of "visible imports" over "visible exports."

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WASHINGTON NOTES

FREE USE OF COLLECTION SYSTEM

Important changes in the Federal Reserve transit and collection system have been determined upon and went into effect June 15. The result of the changes is expected to be that of popularizing to a very considerable extent the use of the exchange and collection facilities of the system. In substance the changes result in cutting off a number of charges that have been made for the use of the collection system, such elimination being rendered possible by the very considerable earnings that are now being realized by practically all Federal Reserve banks. These changes come as the logical next step in the development of the plan first made effective practically two years ago. In summary the alterations now provided for are as follows:

1. The Board approves the recommendation to suspend, or eliminate for the time being, service charges for the collection of cash items; this elimination of charges to apply to checks received from member banks and from other Federal Reserve banks and to become effective on and after June 15, 1918.
2. The Board approves the recommendation that the 10 cent charge on collection items between Federal Reserve banks be eliminated for the present

and until further notice, but that a charge of 15 cents per item be made on all such items returned unpaid, this rule to become effective June 15, 1918.

3. The Board approves the recommendation that telegraphic transfers be bought and sold at par, each Federal Reserve bank absorbing the telegraphic expense, but with the proviso that checks on other Federal Reserve cities or Federal Reserve branch cities be taken at par, subject only to deferred availability in accordance with regular time schedules.

4. The Board approves in principle the recommendation that the discount rate on mail transfers be based upon the fifteen-day rate, but, because it is desirable that the rate for such transfers shall remain as nearly uniform as possible and not vary too frequently, suggests that for the time being and until further notice a charge of 10 cents per day per thousand, or at the rate of 3.65 per cent be fixed as the rate for all mail transfers.

5. The Board approves the recommendation of the Transit Managers, indorsed by the governors, "that all mail transfers to banks in other Federal Reserve cities be made by draft on the Federal Reserve Bank and sent direct to the bank to which the transfer is ordered, rather than to the Federal Reserve Bank."

6. The Board approves the suggestion that there shall be a general revision of all time schedules, effective June 15, 1918, which shall take into consideration recent changes in mail train schedules, and the creation of new collection centers at branch bank cities.

7. The Board approves the recommendation that "trade acceptances," wherever payable, be handled as collection items, not as checks or cash items, but suggests that "bankers' acceptances" be treated as cash items.

The Board has under consideration and expects to approve a plan for linking together by private telegraph system the twelve Federal Reserve banks with its office at Washington, and expects to have these additional facilities available within a short time.

TREASURY FINANCING FOR 1918

In an announcement dated June 12 the Secretary of the Treasury has made public what is practically the program of the Treasury financing for the coming year. The new plan is practically an extension of the system adopted in February last whereby large quantities of Treasury certificates are offered to the banks at short intervals in amounts roughly proportionate to their resources. The banks are expected to purchase and hold these certificates pending the floating of an issue of long-term bonds whose proceeds are then used to fund the maturing certificates. The expenditures of the government, as nearly as can be estimated, will require the sale of certificates of indebtedness up to the first of November, 1918, aggregating approximately \$6,000,000,000. This would involve

the issue every two weeks of about \$750,000,000 of certificates substantially similar in character to those issued prior to the Third Liberty Loan, except that they will have various maturities not exceeding four months. For the months of July and August that program will be followed as nearly as possible. The first issue of the certificates will be dated June 25, will mature October 25 with interest at $4\frac{1}{2}$ per cent, and similar issues, it is expected, will be made on Tuesday of every other week following June 25.

It is contemplated, however, that at a convenient and favorable period during the summer an offering will be made to the general public directly, and through the banks, of an amount yet to be determined, perhaps \$2,000,000,000 of certificates of suitable maturities for use by taxpayers in paying next year's taxes, viz., taxes payable June, 1919, levied under existing and pending legislation. To the extent that certificates of that character are sold, substantially an equivalent reduction in the amount of the regular fortnightly sale of certificates issued in anticipation of the next Liberty Loan will be effected. Early information of the estimated requirements of the Treasury is being conveyed to all the banks of the country, and, through them, to those who expect to make payment of taxes in 1919. They will be asked to make arrangements promptly and of such a character that no delay will be experienced in the sale and distribution of Treasury certificates of both issues. The Federal Reserve banks will advise all national and state banks in their respective districts of the amount of certificates which they are expected to take from time to time in pursuance of this program—a sum which can be figured roughly to equal $2\frac{1}{2}$ per cent of gross resources of each bank and trust company for every period of two weeks, or a total of 5 per cent monthly. It will be remembered that in the February program the amount which the banks were asked to take was substantially equal to 2 per cent of the gross resources for each period of two weeks, or a total of 4 per cent monthly.

The total number of bi-weekly offerings of certificates to be made to the banks will depend somewhat upon the amount to be raised from the public through the sale of tax certificates as described above. The proposal thus placed before the banks is practically equivalent to a doubling of the financing of the past spring and winter, and its eventual success will clearly depend upon the ability to float a proportionately enlarged Liberty Loan which will be the fourth of the series. Assuming that this next Liberty Loan is placed at about the time the first issue of the certificates matures, the loan would evidently be offered toward the end of

September. Could the country at that time successfully purchase and absorb, say, six billions of Liberty bonds? The placing of the new financing upon practically this scale is clearly necessary if the present financial and military program is to be carried out. Possibly the most serious doubt in this connection is furnished by the question whether it is in fact feasible and practicable to spend the amount of money which is to be raised without merely increasing prices of commodities to a corresponding degree and thus really defeating or at least not advancing the essential object of the plan.

NEW TAXATION

It is of course recognized that the whole success of a financial program upon so great a scale must depend upon the laying of a satisfactory foundation for it by means of new taxation. Up to a very recent date it had been assumed that no such new taxes would be levied during the current year, and the Secretary of the Treasury had expressed this belief in his *Annual Report*. The increasing necessities of the government and the growing demands of the allied countries established a basis for suggesting the alteration of this tentative understanding, and such suggestions have been confirmed by the growing conviction that the present income and excess profits law is unsatisfactory and would be unworkable were it not for the unusual co-operation of the community under the stress of war conditions. This situation led to the outspoken declaration of the President in his address to Congress on May 27 when he took definite action in favor of a new measure of taxation, whose necessity has now been reluctantly accepted by Congress.

In a letter to the Chairman of the Ways and Means Committee dated June 5, the Secretary of the Treasury furnishes some detailed data designed to substantiate the belief that immediate action is requisite. The statistical tabulations submitted show that in March, 1917, the expenditures were in round figures \$100,000,000. In May, 1918, they were \$1,508,195,000. If there should be no further increase during the coming fiscal year, the cash expenditures upon the May basis would be more than \$18,000,000,000. If, as seems inevitable, the increase in expenditures should continue at the rate of \$100,000,000 per month for the next six months, or until December, 1918, and if thereafter the monthly expenditures should remain stationary until June 30, 1919, the Treasury would have to finance expenditures aggregating \$24,000,000,000 during the fiscal year ending June 30, 1919; or, to put it in another way, if the average monthly expenditure should exceed that for the month of May,

1918, by $33\frac{1}{3}$ per cent, it will be necessary to provide \$24,000,000,000 in the fiscal year 1919.

In the fiscal year ending June 30, 1918, cash disbursements will amount to between \$12,500,000,000 and \$13,000,000,000. Of this amount about one-third will have been raised by taxes and two-thirds by loans, all of which will be represented by long-time obligations, that is, bonds of the First, Second, and Third Liberty Loans and War Savings Certificates. On the strength of this showing it would thus appear that with taxes producing their present yield it would be necessary to raise, by borrowing, during the fiscal year 1919 about \$20,000,000,000. The danger or impossibility of such an attempt is obvious and hence the development of a plan to raise at least \$8,000,000,000 from taxation. In order to get the amount required the Secretary of the Treasury makes the following suggestions:

1. That one-third of the cash expenditures to be made during the fiscal year ending June 30, 1919, be provided by taxation. According to estimates this would involve raising \$8,000,000,000 through taxation.
2. That a real war profits tax at a high rate be levied upon all war profits. This tax should be superimposed upon the existing excess profits tax in such a way that the taxpayer should be required to pay whichever tax is the greater. The existing excess profits tax should be amended in certain important particulars so as to remove inequalities.
3. That there should be a substantial increase in the amount of normal income tax upon so-called *unearned* incomes. Under existing law *earned* incomes above certain exemptions are taxed 4 per cent as an income tax and 8 per cent as an excess profits tax, making a total of 12 per cent, while *unearned* incomes, derived from securities, etc., are taxed only 4 per cent. The 8 per cent tax should be recognized as an income tax and the rate of 12 per cent (4 per cent normal and 8 per cent excess profits) should be retained in respect to *earned* incomes, while a higher rate than 12 per cent should be imposed on *unearned* incomes.
4. That heavy taxation be imposed upon all luxuries.

The program thus outlined, taken in conjunction with the immense borrowing plan, will come close to doubling the burdens imposed upon the community during the past year and again raises the question whether there is a savings margin in the country large enough to provide means for carrying any such load. Up to date the highest estimate of produced wealth over consumption, i.e., savings, has been \$18,000,000,000. If \$24,000,000,000 is to be obtained, there must, therefore, be either an increased production or a decreased consumption amounting

to \$6,000,000,000. That the amount required can be obtained by either method is naturally gravely to be doubted, and the alternative—that of merely bidding up prices through urgent demand for goods—presents itself as a danger.

RAILROAD RATES AND WAGES

Probably the most important action yet taken by the Director General of the Railroads is Order No. 28, issued on May 25, and relating to rates and fares on the railroads of the country. As has been widely announced, the effect of this order is to bring about an increase of about 25 per cent in nearly all freight rates, while, at the same time, passenger fares are increased to three cents a mile. What is practically a distinction between first- and second-class fares is introduced by the addition of an extra charge of 16 $\frac{2}{3}$ per cent of the regular fare for the validation of ordinary tickets in sleeping and parlor cars. The advance in rates thus affected is notable, coming as it does practically contemporaneously with Order No. 27, which accords to railway employees increases of salary and back pay variously estimated at upwards of \$300,000,000. The effect of the two orders taken together is thus to produce a very material increase in the pay of railway employees while placing the cost of it upon the public. Even more significant, however, is the fact that the order providing for freight-rate increases does not stop with the 25 per cent advance that has been ordered, but goes on to direct other advances and reclassifications which, when placed in conjunction with the flat increase of 25 per cent already described, will necessarily bring about an alteration in the whole freight-rate structure.

The act of March 21 authorized the President, whenever in his opinion public interest requires, to initiate rates, fares, changes in classifications, regulations, and practices. This gave to the administration absolute authority over practically every phase of railroad operation. The President (which in practice means the railroad administrator appointed by him) has to file his changes with the Interstate Commerce Commission, and it was provided that such changes should not be suspended by the Commission pending final determination. The Commission retains, under the law, power to enter upon a hearing concerning the reasonableness of any of these orders of the President, and to make such findings and orders as they are authorized to make under the act to regulate commerce, except that if the President should find and certify to the Interstate Commerce Commission that any given change was necessary in order to increase revenues the Commission shall take into

consideration this finding by the President. This latter provision probably means in practice that the Commission would seldom, if ever, alter an order made by the Federal Railroad Administration except as to some matter of detail or practice, inasmuch as the main reason for making the change would be likely to be that of increasing the income of the roads. It is substantially true, therefore, that the status of the Interstate Commerce Commission was quite materially altered inasmuch as the changes of rates and practice determined on by the government now go into effect without delay and must remain in effect subject only to what is likely to be a rather limited power of modification by the Commission. The power of the Federal Railroad Administration will be further greatly increased by the authority carried in the act to order the making of additions, betterments, or extensions, and if necessary to advance the funds for that; but the power to raise rates has naturally been the first to be employed.

The action taken in advancing rates at this time is regarded by many persons as a substantial vindication of the position of the roads in recent years. They have for a long time urged an increase of rates, but their applications have been almost unanimously rejected by the Interstate Commerce Commission. Whether the roads are restored to private management on the old basis or not at the end of the war, the effect of the action now taken is undoubtedly that of materially strengthening the claim of the roads to what they call a "living wage"—that is to say, to rates that will enable them to pay their expenses and fixed charges, and which, therefore, increase as the latter increase. On the other hand, the action taken is likely to make it harder to restore the roads to private ownership, partly because the stockholders may prefer a situation in which they are protected against loss, if that situation can be maintained, and partly because, under the new arrangement of freight rates and other changes of like kind, which will doubtless follow, there is likely to be a material redistribution of traffic. Altogether Order No. 28 opens an entirely new period in the history of railroad management under federal control.

CONTROL OF FOREIGN EXCHANGE

The development of the gold-embargo policy and the strengthening of public control of foreign exchange is bringing about in the trade of the United States the development of new conditions which are necessarily leading to the application of further methods of commercial regulation. Up to date under the gold embargo there have been granted licenses for the importation of about \$60,000,000 gold, \$160,000,000

silver, and \$30,000,000 currency in round numbers, or a total of approximately \$250,000,000. The value of the dollar in foreign markets has continued to decline because of the difficulty of obtaining means of remittance for the purpose of settling balances.

Peculiar conditions are recognized as surrounding the gold situation, due to the fact that as a result of the war and limitations upon trade it is not possible, as in times of peace, to offset foreign balances against one another. The situation is leading to the negotiation of special agreements with various foreign countries for the regulation of exchange relationships, many of these being based upon undertakings to export net balances of gold within a specified period after the close of the war. Congress has made provision by law for the sale of bonds abroad, payable in terms of foreign currency, and this may render it possible in some instances to provide a means of liquidating balances due to those countries.

In some cases conditions have become so acute as apparently to require direct regulation of payments. In the case of Italy, for example, it has been deemed best to effect an adjustment whereby the practical supervision of each transaction is placed in the hands of a committee representing the Italian and American governments. Experience in connection with our foreign exchange relations is very similar to that already had by foreign countries which have attempted the same method of restricting payment. The interesting question in the whole matter is whether it will be possible to bring about a general control of financial relations with foreign countries unless trade relations with them are first subjected to such control. Thus far the regulation of trade relationships has been in the hands of the War Trade Board, but that Board has been governed very largely by military considerations and has given comparatively little attention to the commercial side of our foreign business.

Within the past sixty days the United States Shipping Board has come forward as a part of the system of regulation by applying methods for the control of tonnage. Under this plan those who wish to import commodities into the United States must obtain tonnage through assignment by the government. They are thus obliged to secure not only importation licenses but must also secure in practice action which will furnish them with the means of moving their goods. As yet it is uncertain how far this system will be worked out upon a strictly economic basis, that is, with a view to adjusting trade balances and thus relieving the disturbances to exchange and other financial relationships with for-

eign countries. As the war continues for a longer and longer period the necessity of a general limitation upon foreign business will grow more and more pressing, and the adoption of temporary measures designed to relieve difficulties in the exchange situation will become necessarily less and less effective. This is even now being made evident by the difficulties already referred to in connection with the tendency of the dollar to depreciate in buying power abroad as compared with currency units of the countries with which we are doing business.

BOOK REVIEWS AND NOTICES

The Nature of Peace and the Terms of Its Perpetuation. By THORSTEIN VEBLEN. New York: Macmillan, 1917. 8vo, pp. xiii+367. \$2.00.

Mr. Veblen has applied the conception which he entertains of the present economic order of society to the problem of securing a permanent peace. Mr. Veblen's conception of existing society his readers have found in the *Theory of the Leisure Class and the Theory of Business Enterprise*. In brief, it contemplates a society in which the usufruct of the creative industry of the community passes into the hands of the small fraction of those who own and control the community's wealth and the opportunities for labor. From this is subtracted what goes to the upkeep of the masses, including some expenditures which are not necessary for upkeep, but represent needs which have arisen through imitation of the well-to-do and wealthy. These expenditures, however, tend to be kept within narrow bounds in proportion as the business organization of the community is effective and clear-headed. The expenditures of those who possess or control the wealth of the community beyond what is involved in upkeep and investment fall under the Veblenian category of "pecuniary waste and personal futility," a category of expenditure which is indefinitely extensible. Such a society moves inevitably toward the sharpest opposition of interests, on the one hand those of the masses made up of the common people, i.e., the operatives, together with the farmers who entertain the illusion that they are in control of the agricultural industry of the country, and on the other those of the wealthy who control the usufruct of the industry of the community, together with the well-to-do, who, as agents of those in possession, find their advantage to go with that of their masters. This clash of interests is favored by certain characteristics of this modern industrial period, especially the breakdown of the earlier feudal loyalties of the man for his master due to the attention shifting from persons, in their social relations, to things, i.e., the mechanisms of industry. Machinery in breaking up the crafts industry with its emphasis upon persons has also tended to destroy the social structure of mediaeval Europe with its habitual unthinking subordination of the lower groups to the ruling or economically "kept"

class. The preservation of a certain amount of competition still gives the employee a measure of independence, and inventions at times bring within his reach a higher standard of living. Such an industrial life furnishes the economic background of the war.

Politically the distinction of first importance is that between the dynastic states and those with so-called liberal institutions. The important instances of the former class are imperial Germany and imperial Japan. While the general attitude of the liberal states with more democratic institutions is "to live and let live," the inevitable push of the dynastic state is toward domination and more domination. It can exist only in the continual exercise of this impulse. It must therefore depend upon military organization within the state and upon conquest and the threat of conquest in its relations with other states. Two social attitudes render the dynastic state possible, that of feudal loyalty for the dynastic ruler and that of patriotism. The preservation of this first trait, that of feudal loyalty, in the German and Japanese people is due to their being politically less developed or, as Veblen states it, less mature. In course of time the operation of machine industry in the community will presumably deprive the people of these communities also of this capacity for dynastic loyalty, but for the present the perilous circumstance for Europe and America is that such dynasties have, in Veblen's opinion, complete control of their peoples, despite their industrial efficiency, and must act militantly, i.e., must be true to their nature. The other trait, that of patriotism, is common to both types of states, the dynastic and the more democratic communities.

In passing it is well to correct the impression that actual political control, according to Veblen, belongs to the masses in democratic communities; on the contrary, it rests inevitably with the small fraction who control the wealth of the community. The difference in the two types of communities lies in the disappearance, through neglect, of the trait of dynastic loyalty. It is also well to note that, according to Veblen, in the liberal or "night-watchman" state the material interests of the possessing class on the one hand and of the common man on the other are so diverse that no patriotic enterprise can be of common interest to both. In fact no patriotic enterprise can possibly be of benefit to the community at large in a material sense.

In its economic, biologic, and cultural incidence patriotism seems to be an untoward trait of human nature; which of course has nothing to say as to its moral excellence, its aesthetic value, or its indispensability to a worthy life. . . . Its moral and aesthetic value signify for the purposes of this argument

nothing more than that the patriotic animus meets the unqualified approval of men because they are, all and severally, infected with it [p. 47].

The emulative spirit that comes under the head of patriotism commonly if not invariably seeks its differential advantage by injury of the rival rather than by increase of the homebred well-being [p. 33].

Apart from prestige values these things (the so-called moral issues which commend a war to the community, such as "National Honor," "A Place in the Sun," "The Freedom of the Seas," "The Open Door," and the like) are worth fighting for only as prospective means of fighting [p. 37].

So that the chief material use of the patriotic bent in modern populations appears to be its use to a limited class of persons engaged in foreign trade, or in business that comes in competition with foreign industry. It serves their private gain by lending effectual countenance to such restraint of international trade as would not be tolerated within the national domain. In so doing it has the secondary and more sinister effect of dividing nations on lines of rivalry and setting up irreconcilable claims and ambitions, of no material value but of far-reaching effect in the way of provocation to further international estrangement and eventual breach of the peace [pp. 75 and 76].

The aggregate cost to the community of such an enterprise in retardation (i.e., patriotic enterprises in military or trade wars) is always more than the gains it brings to those who may benefit by it [p. 54].

Into this cultural and technological system of the modern world the patriotic spirit fits like dust in the eyes and sand in the bearings. . . . The patriotic spirit is at cross-purposes with modern life, but in any test of the case it is found that the claims of life yield before those of patriotism; and any voice that dissents from this is a voice crying in the wilderness [pp. 40 and 41].

Finally we have Veblen's definition of patriotism as "a sense of partisan solidarity in respect of prestige," and "a sense of undivided joint interest in a collective body of prestige" (31). The prestige here referred to is the feeling of national superiority arising out of national invidious comparisons, though dependent on an organization of impulses which are physically inherited. Patriotism is then an attitude of mind which is socially inherited, and according to the author is very uniformly present in all the populations of Europe and among the Japanese, though absent from the Chinese. It is the only important common social trait of the common man in the community and the member of the wealthy class, so that when appealed to it unifies the community for the time being.

It does need as long an argument as Veblen gives to the undertaking to prove from these premises that a permanent peace is possible only with the elimination of the dynastic states on the one hand and on the other of those issues which call out the "emulative spirit that comes under the head of patriotism." These issues are found in the national support of the claims of the citizen abroad, in the favoring of national industry by protective tariffs and trade wars, and in the imperial control of weaker communities by the stronger in the supposed interest of home industry and commerce, or in the interest of national prestige. In the interstices of the author's too-elaborate argument one finds a number of alternatives imbedded that prove to be of considerable interest. Assuming that the dynastic states cannot be eliminated, we must contemplate the other alternatives, that of submission and that of some agreement with the preservation of the balance of power.

In the consideration of the alternative of the acceptance of submission on the part of the democratic countries to the imperial establishment of Germany, Veblen dwells upon two phases of the social situation. The first of these is that so far as the material interests of the common man are concerned he would suffer no loss in such submission. The present order of private ownership with the concentration of financial control in the hands of the few takes away from the common man the means and the incentive to a life in which he is able personally to control the manner and ends of his living. On the one hand he finds himself in a vast system in which efficiency means the reduction of his wage to the level of maintenance of himself and those dependent on him, with the few crumbs that drop to him from the inventor's and manager's table increasing incidentally his comfort and the standard of his living. On the other hand he is psychologically bound, according to Veblen, in his expenditures beyond the limits of the demand for food, shelter, and covering his and his wife's and children's nakedness to imitate the pecuniary waste and personal futility which characterizes the spending of the possessing and well-to-do classes. In the so-called democratic countries he does not even get the benefit of a wide community view of the physique and morale of the operative, for under the system of private control of the country's wealth and competition between capitalists the employer feels no responsibility for the upkeep of his man power. When this is worn out it renews itself. If his machinery wears out he must replace it at his own expense. If his workers are worn out they are replaced at the expense of those who come to take the positions of the workers who have been scrapped. Veblen draws out at some length and with

his accustomed power of innuendo the advantages which would accrue to the common man from the German imperial control of the social order. All the advantages which he lists would arise from the imperial (Veblen always capitalizes "Imperial") control of private industry, in this way approaching the overthrow of the present system of the business man's control over the industries of the country.

Probably no more effective way of presenting the disabilities of the operative in the modern machine industry could be found than in emphasizing the material advantages which would accrue to him in case he accepted complete political subjection to a foreign imperialistic power.

Evidently if the common man of the modern nations that are prospectively to be brought under the tutelage of the Imperial government could be brought to the frame of mind that is habitual with his Chinese counterpart, there should be a fair hope that pacific counsels would prevail and that Christendom would so come in for a régime of peace by submission under this Imperial tutelage. But there are always those preconceptions of self-will and insubordination to be counted with among these nations, and there is the ancient habit of contentious national solidarity in defense of the nation's prestige, more urgent among these peoples than any sentiment of solidarity with mankind at large, or any ulterior gain in civilization that might come of continued discipline in the virtues of patience and diligence under distasteful circumstances. The occidental conception of manhood is in some considerable measure drawn in negative terms. So much so that whenever a question of the manly virtues comes under controversy it presently appears that at least the indispensable minimum, and indeed the ordinary marginal modicum, of what is requisite to a worthy life is habitually formulated in terms of what is not. . . . The indispensable demands of modern manhood take the form of refusal to obey extraneous authority on compulsion; of exemption from coercive direction and subservience; of insubordination, in short. But it is always understood as a matter of course that this insubordination is a refusal to submit to irresponsible or autocratic rule. Stated from the positive side it would be the freedom from restraint by, or obedience to, any authority not constituted by express advice and consent of the governed. . . . The common man, in these modern communities, shows a brittle temper when any overt move is made against this heritage of civil liberty. He may not be well advised in respect to what liberties he will defend and what he will submit to; but the fact is to be counted with in any projected peace that there is always this refractory residue of terms not open to negotiation or compromise. Now it so happens that these residual principles of civil liberty have come to blend and coalesce with a stubborn preconception of national integrity and national prestige. So that in the work-day apprehension of the common man not given

to analytic excursions any infraction of the national integrity or any abatement of the national prestige has come to figure as an insufferable infringement on his personal liberty and on those principles of humanity that makes up the categorical articles of the secular creed of Christendom. The fact may be patent on reflection that the common man's substantial interest in the national integrity is slight and elusive, and that in sober common sense the national prestige has something less than a neutral value to him; but this state of the substantially pertinent facts is not greatly to the essence of the case, since his preconceptions in these premises do not run to that effect, and since they are of too hard-and-fast a texture to suffer any serious abatement within such a space of time as can come in question here and now.

Veblen nowhere recognizes in the society within a nation, nor in the relations of nations to each other, any comprehensive principle of social growth.

In a few words, the common man gets no advantage out of the structure of society which he fights to protect. He fights to protect it because through historical causes he has come to resent direction in which he has no voice; and although it is true that he is not able to control his own industrial condition through the operation of liberal institutions, still he has identified his independence with these institutions and the institutions with the national prestige. Veblen regards these identifications as largely accidental, but recognizes them, not only as everywhere present in the so-called democratic communities, but as so grounded in fixed habits that there is no likelihood of their changing in the near future. Therefore the workingman will not adopt the Chinaman's attitude and will not accept the domination of a German autocracy though it would be on the whole to his material advantage.

On the other hand the German will remain in his attitude of feudal loyalty for the same reason, i.e., the force of secular habits. Here Veblen sees a necessary change in the end. The machine ordering of life, the dependence on things instead of persons which characterizes our technological industry and the life that is shaped by dominant industry, will in the end make a feudal loyalty to the Prussian dynasty impossible, but it will be a long process in which old custom will slowly die from disuse. Veblen sees no revolution on the horizon in Germany. Neither through submission to the imperial establishment of Germany nor through the liberalizing of the institution of Germany is a permanent peace to be realized, at least within the lifetime of the oncoming generation.

There remains the alternative of the conquest of the military government of Germany and its elimination from a decisive position in the

Western World. What prospects of permanent peace would this bring with it? Nothing in the fundamental attitudes of the peoples of the democratic countries offers a serious obstacle to such a permanent peace. There will still be dangers from the sense of the national prestige, but there is nothing inconceivable in working out a system by which difficulties of this sort could be met. There is nothing in the institutions of the western entente powers which fundamentally opposes the idea of peace as does the will to domination which is the very nature of the German autocracy and, one should add, of the Japanese autocracy. War is a necessity for a monarchy which rests upon a military basis. No such logical contrary to peace exists in the structure of the communities which are fighting the Central Powers. What is necessary to reach such an understanding that war could be avoided is the abandonment of the causes of war. These are the domination of colonies and spheres of influence for avowedly commercial reasons; the national support of concessions and investments made by citizens of one country in the enterprises of another, protective tariffs and trade wars, and finally the absence of neutralization of citizenship.

Although this last elimination of a cause of war is referred to quite frequently by the author, it is most unsatisfactorily treated. His illustration is found in the large numbers of foreign citizens who live quite contentedly in the United States without becoming naturalized. He does not discuss their loss of the privileges of political life in America nor the detriment to our community of the presence of large numbers who are intimately affected by the political conditions which they cannot help to control. Nor does he discuss the manner in which without change of citizenship people could become a part of the governing body of the community within which they happen to reside. Presumably Veblen contemplates a situation in which national consciousness would largely if not entirely disappear, and with it any citizenship which would have to be protected when the individual found himself in foreign parts. This seems a fair assumption because the author finds nothing in a national consciousness which has any other function than that of providing possible causes for hostilities between different communities.

Not only does the removal of these occasions for war involve no fundamental conflict with the structure of liberal states of the Western World, but Veblen could sense a real movement in the direction of these changes in international life when his book was published in February of last year. Since then the demand for such measures for the safeguarding of peace has become much more articulate. They are logical

expressions of the animus of the liberal state to live and let live. The author, however, sees another danger to peace which successful accomplishment of all these measures would not remove. A peace in our modern industrial state would quicken the industrial process under its present financial control. It would hasten the process by which the community is being divided into the nine-tenths who are without possession and the social control which possession gives and the tenth which includes those in possession and control and those who are their immediate managerial, legal, engineering, and scientific satellites. The material interests of these two groups in the community are so opposed that a condition favorable to their sharp differentiation must tend to precipitate a struggle between them, a struggle whose issue would be the continued control of the process of industry in the interest of private financial gain. The appearance of this revolution or the serious threat of it would complicate the peace of the world, for no more effective damper upon revolution could be found than the awakening of patriotic fervor by an attack upon another country, and the danger of the spread of revolutionary spirit from one country to others might well lead those countries which viewed with alarm a revolution elsewhere to come to the assistance of the propertied classes with their military power. Thus even a peace which had been won by the elimination of the dynastic power of Germany would carry in its own bosom the germs of social disorder and the threat of later international strife.

The rigidity of the Veblenian categories is occasionally relieved by an apparent recognition of other forces which are there and at work, though they have no logical place in the economic world. Thus the author recognizes a sense of a "community" which has been independent of dynastic loyalty and has been an inheritance in France possibly from Roman times. The English attained a national sense through their earlier revolution in which the dynasty lost its hold on the loyalty of the people; and yet the attitude of these peoples, commonly called democratic, is referred to by Veblen as a habit of "insubordination." He recognizes that the spirit of these people with so-called liberal institutions is "to live and let live," though the reason for this more social attitude is found only in the absence of an imperial establishment. In a word, there is no indication of positive social forces in society which in the midst of imperialistic, political, and economic movements tend toward democratic control. It is of course true that Veblen is writing, not an exposition of the social order, but an account of the prospects for a permanent peace, and yet the reasons he gives for his conclusions could not be

adequate if they left out of account profound social forces that work with or against those which he has depicted. The author's account is of the hostile self-assertion of nations over against each other and of economic groups within these nations.

After all, these conflicts *are* taking place within societies. The economic struggle between the possessing-employing class and the workers of the nation is at the worst within a community in which there are common interests, and common interests beside common national hatreds. The vivid international economic, artistic, scientific, socialistic, religious, and humanitarian movements that affected all classes in all the countries of the Western World before the war are sufficient evidence that there existed an international society within which this catastrophic struggle has arisen. One need not be a Hegelian and maintain that all movements are contradictory arising out of a social situation and leading to a synthesis that harmonizes them to recognize that society exists because it has a principle of life within it, and that the present struggle may very well make possible a higher organization within it, as the conflicts of groups and individual interests have in the past made for a more highly organized community. Veblen isolates the forces of national and class self-assertion in dynastic and capitalistic control and insists that they inevitably work out in social exploitation alone. Yet in the history of human society self-assertion in groups and individuals has led through rivalries, competitions, and finally co-operations to new types of individuals. The present-day legal and political citizens are individuals who have slowly evolved with the institutions which have grown out of group-struggles and a feudal society whose entire occupation was internecine warfare. During the period of this feudal chaos there was indeed an international consciousness which found its expression in the Holy Catholic church and the Holy Roman Empire, for there have always been forms of social conduct which have held people together, as well as the fights in which groups and individuals have sought to destroy and exploit each other. It is true that self-assertion either in the group or in the individual has been universally hostile in its early forms, for a social order in which one can assert himself or his group while he asserts and respects the rights of others comes later and is a development out of the earlier hostile attitude. What Veblen calls patriotism is the attitude of members of a hostile group. A "sense of solidarity in prestige" is the sense of group-superiority which one always possesses or seeks to possess in a fight. If by definition patriotism is to be restricted to the hostile consciousness, all that Veblen says of it is true. But if it is to

include the attitude of members of the community toward other communities in their co-operations and arbitrations and satisfactions of mutual claims, or even in their rivalries and competitions which are conducted in other ways than fighting, a "sense of solidarity in prestige" is not an adequate definition. As the attitude of hostility develops into that of national individuality with the growth of international organization, patriotism in the Veblenian sense will be an early stage in the development of such a community sense as can function in an international society.

The passage of feudal loyalty into loyalty to a national monarch was due to mediation by this latter loyalty of a consciousness of a larger society. It was not simply the transfer of a blind attitude of subordination from one master to another. Nor was the formation of the German Empire the result of a blind transfer of loyalties. It was the achievement of the German national consciousness that made this loyalty to the Hohenzollerns possible. This positive content of national consciousness Veblen's doctrine of patriotism ignores. It is a consciousness that comes with the feel of the greater values that belong to more complete community life. In all fields of social endeavor it is the sense of value for the community that is the basis of the final estimate, and the more complete this community sense can be the truer will be our estimates. To resolve this social consciousness into its negative expression in fighting is to lose, not only its positive import, but also the recognition of its passage from the negative form into that which can animate a society of nations. It is entirely true that a dynastic state must stand on a militaristic foundation and under any condition must be a continual threat of war. But the dynastic state may dig its own grave by advancing social organization, as indeed the German bureaucracy was doing till it took refuge in the present war. The opportunity of the German government after the formation of the empire, lay in the fact that its militaristic state was independent alike of the capitalistic employer and the masses of the laborers. This superiority over the industrial and financial group enabled the German government to inaugurate a program of social legislation which nations with liberal institutions have but tardily undertaken. In the countries with liberal institutions the financial and industrial magnates have so dominated their governments that this German legislation, though undertaken in the interests of the workingman, has been but slowly copied. Two powerful influences in the support of the German dynastic government are then the achievement of the German nation and of a continuous program of progressive social legislation. Veblen's account considers nothing but the age-long

habit of loyalty to dynastic masters in German land. Though habits so ingrained change of themselves but slowly, a government that is dependent for its popular support upon its recent social achievements may well fall when such accomplishments fail. Veblen's formula is too simple and abstract.

Veblen's book was written before the publication of the program of the English Labor party and the author was unable to comment on it. It is a program that assumes that the wealth of the community can and may be commandeered for the common good. All governments among the belligerents are acting today upon that principle. Unquestionably such a program would not have been formulated by the English Labor party at this time but for the war, but it is after all an outcome of the democratic movement in our modern industrial democracies. It is not a movement to abolish private property. It aims to proceed slowly and experimentally. It has been dependent on the development of many forces besides the growing power of organized labor. Education, sanitary science, the prevention and elimination of disease, improved housing, and other social undertakings have contributed to the formation of the present conception of what should be the standard of life, and this is responsible for the recognition that the wealth of the community can be and should be spent by the community for those community values which can be obtained in no other way. Now this movement which gives the content to the program by the English Labor party gets no recognition from Veblen, who sees only the tendency of wealth to gravitate into the hands of the few, and their tendency to spend it for purposes of conspicuous waste or, to use his other formula, "pecuniary waste and personal futility." Veblen's formulas are too simple and abstract to do justice either to social movements or to the psychology of the individual.

GEORGE H. MEAD

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Trade Unionism in the United States. By ROBERT F. HOXIE.

New York: D. Appleton & Co., 1917. \$2.50.

Professor Hoxie's critique on American trade unions appears at a time when they are more securely intrenched in American life than ever before. It is timely both because it throws light on the efforts and purposes of these organizations and because it lays the intellectual groundwork for sound programs for economic reconstruction. Inevitably as the war draws to a close, and as the forces which it is shaping

become clearer, various plans for social reorganization will spring up in America as they have in England. And they will have value only as they are animated by the sort of tough-mindedness which characterizes Professor Hoxie's thinking. To be patient in inquiry and fearless in realism was his constant effort. And in the treating of such a complex subject as trade unions this patience and fearlessness were especially needed. They have, moreover, been amply rewarded, for the present volume promises to stand for some years to come as the most penetrating and sympathetic interpretation of the labor movement.

There are four major ideas which at the same time underlie the detailed discussion of trade-union policies and constitute the vital conclusions of the study. The inwardness of the book will be most readily understood if we consider briefly these four ideas and indicate the way in which Professor Hoxie has used them.

The book gets its first claim to realistic treatment because of an insistence upon the psychological point of view. Professor Hoxie has in the second place had constantly in view the conception of "function" which De Maetz has since popularized in his *Authority, Liberty and Function*. His discussion of labor's attitude toward scientific management constitutes the third valuable feature of the book. And his reiteration that the labor problem is fundamentally a problem of control is the fourth idea.

The book includes no systematic discussion of modern psychology in its relation to the labor problem, but a service of equal value is rendered because this knowledge animates the entire thinking of the author. His specific references to psychology are few and general. For example, in discussing "the rational man" he says:

I do not intend to deny that men do weigh and balance before acting, or to maintain that they are not at all rational. What I mean to say is that they are not altogether rational, that they are moved by love and hate, fear and prejudices, habits and propensity, apart from and often in opposition to the dictates of rationality. And this is not only in line with common observation but with modern psychology, which tells us that we are bundles of propensities, preconceptions, impulses, and habits—some of them inherited from a remote past. We are guided in our action both by feeling and habit, by intellect, and perhaps more by the first than by the last.

This is as explicit as his references to the contribution of modern psychology ever become. He had not followed the train of thought which Professor Carleton H. Parker's writings have started regarding the relation of the psychology of the abnormal and of suppressed desires

to the interpretation of industrial unrest. Nor did he utilize in detail the "behavioristic" psychology which seeks to understand conduct in terms of the interaction of instinct and intelligence. But without the obtrusion of this scholarship he successfully held in view his knowledge of human nature; and he used this conception of human nature as a touchstone to which he brought institutions and movements for judgment.

The conception of functional organization is in the last analysis a simple idea. Wherever there is a function to be performed, a group of interests to be protected, an organization will in all probability be created to perform the function. The widespread recognition of a common need or of common unprotected interests means the creation of a new group. The extent of organization among manual workers stimulates Professor Hoxie's curiosity; and the main question which his book seeks to answer is: Why do trade unions exist; what functions are they expected to perform? The question is not raised in vain, for Professor Hoxie's answer is specific, practical, and complete. The book demonstrates that they do not exist by chance or because of the "cussedness" of labor agitators. They exist in the first instance for purposes of defense. The trade union is seeking to defend the human rights of the manual worker in the face of an economic evolution in which credit control is increasingly centralized and large-scale industry increasingly prevalent. Yet, as Professor Hoxie rightly points out, the function of defense, while it is obviously an immediate one, is not the basic one. The point is made that to secure defense under existing conditions the purpose must be the securing of increased control. In other words, the trade unions have a function; they are born of necessity. And their vital character is leading them on to make claims in the government of industry which exceed the mere request for "reasonable" adjustment and demand participation in control.

It is because scientific management at every point balks the fulfillment of this purpose of extended control of industry by the workers that it is so cordially condemned by organized labor. Professor Hoxie has made the point that the application of "simon-pure" scientific management results in the weakening of trade unions because it minimizes craft training and craftsmanship; it puts all matters of judgment and discretion in the hands of the management and leaves the worker a mere "hand" in a great industrial machine. Indeed the emphasis of scientific management upon output and low unit costs means, in the absence of other offsets, that all the evils of capitalist production are

being progressively accentuated. Whether the unions have recognized this consciously or not does not matter. The fact remains that scientific management applied without correctives would mean overproduction, underemployment, an oversupplied labor market with workers bidding each other down in an effort to get a day's work. And with an unerring instinct for self-preservation the unions have obstructed the application of Taylor system ideas. Its unadulterated success would leave the workers not only stripped of any share in control but unprotected as well.

The limitations of a book devoted only to understanding what *is* are well illustrated in this discussion of scientific management. The study makes no great effort to pull together its own conclusions or to draw the more obvious lessons from its own facts. "Scientific management," concludes Professor Hoxie's chapter on this subject, "properly applied, normally functioning, should it become universal would spell the doom of effective unionism as it exists today." But the obverse of this conclusion is less clear, especially in the light of the upheaval of ideas which the war is causing. It is *not* true, as things stand today, that trade unions "properly applied" and "normally functioning" would "spell the doom of effective scientific management." The pessimism of Professor Hoxie's conclusion is obviously at odds with his own dynamic conception of labor's place in the community. To be sure he is merely stating a fact in recording trade-union opposition to "efficiency systems"; but his implication is that it will be permanently impossible to reconcile labor organization with efficient operation in industry. The direction, even when he wrote these chapters, was all the other way. The play of creative intelligence in the industrial world was beginning to show methods of reconciliation. They are to be more plainly seen today. Both "effective unionism as it exists today" and "scientific management properly functioning" are in constant flux. Neither is blind to the forces at work in industry and neither is unaffected by them.

Indeed the gradual shift of emphasis in the labor world from the cry for "more, more, more" in the way of wages to demands for joint control of shop affairs and methods means that the chance for labor to control improvements in process will increase. And the control of labor over processes will, if present indications are true, mean not stagnation in operating methods but their readier acceptance, *provided that the workers secure simultaneously guaranties of regular work and adequate pay.*

The demand for control is after all the real demand of the unions. The unions are groups of manual workers, interested in a share of life

as well as of livelihood. What life means, how it is to be secured, labor does not always know. But it does know that control over the great economic forces that make and break civilizations is now in hands that are blind to human, personal considerations. The recent demands of the British Labor Party for a "new social order" were made by a body composed predominantly of trade unions, schooled in trade-union discipline, taught by trade-union experience that "wages, hours, and conditions" were poor substitutes for "a new deal all round." What the trade unions of England now want is "the democratic control of industry, the enforcement of the universal national minimum of subsistence, the social control of credit and finance, and the utilization of the industrial surplus for the workers' good." A large order, but one born of a vision of popular control in which human and personal ends are dominant and determining.

Professor Hoxie is not discussing English labor, but the developments in the English world convincingly illustrate his text. American labor is as yet less vocal in its demands than its British colleagues; but, as the author says, its claim for increased control already "interferes vitally with current distributive methods and results; it combats at every point the employers' claims of rights in the management of industry; it conflicts with the legal theory upon which our social and industrial system is based and with the established law and order; in many ways it opposes our conventional ethical standards and notions of right and justice."

In the period of American reconstruction these claims for a thoroughgoing modification of existing legal, business, and ethical standards promise to be pressed with maximum vigor. Whether or not they will be urged in a spirit of tolerance or in a passion of revolt remains, as Professor Hoxie intimates, for the "third party" to decide. For he is convinced that the existence of a "public" with a "public opinion" is a reality—a reality that can have determining weight in industrial affairs. Being a realist, the author has not conceived of America as arrayed "capital" against "labor." He sees rather varied opposing interests aligning and realigning as interests and functions change. But in any one controversy, even though it be on a large scale, there are "the people . . . a party already capable in ordinary cases of acting as mediator and arbiter between the warring classes."

Professor Hoxie goes farther than this, however, if I understand him aright. He appears to look with favor upon the rather unrealistic idea that "with the growth of knowledge of social affairs and the increase of social interaction fostered by democracy, this third party will gradually

control the warring classes and ultimately absorb them. The social will will then be supreme, and social harmony will prevail. The attainment of this end involves a constant extension of social control in the form of legislation and public opinion in the support of the weaker warring class—the workers.” Nevertheless he goes on to add that “while in matters in which the interests of the warring classes are really opposed there appears to be no possibility of a third party altogether without any economic class interest and bias, or of setting up general and absolute or exact standards of social right or justice to which all or a majority can be depended upon to adhere, there *is* a possibility of discovering in connection with every such specific problem *minima* and *maxima* which represent a nearer approach than at present exists to social right and justice.”

And he concludes the book sturdily enough with a strong, ringing plea for the development of “social standards, of a constructive program, and of the machinery to put it into force.” Pointing out that the “so-called public has no machinery of action, or constructive program, and no means of getting into the game before the struggle is on,” he valiantly cries out for a “means of informing the public beforehand” in order “to make action a school for the development of social understanding and constructive ends.”

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Mercantile and Agricultural Economics *C. S. Duncan* 769

The Cattle-Loan Company *Forrest M. Larmer* 807

Notes 832

Washington Notes: 832
The War Revenue Bill—More Bond Legislation—Government Control of Railways

Book Reviews and Notices 837

DUNN's *Regulation of Railways* (C. O. Ruggles), 837.—THOMPSON's *History of the United States—Political-Industrial-Social* (Leverett S. Lyon), 843.—LAUGHLIN's *Credit of the Nations. A Study of the European War* (W. A. Scott), 844.—DIXON AND PARMELEE's *War Administration of the Railways in the United States and Great Britain* (Eliot Jones), 846.—BENJAMIN's *The Larger Liberalism*, 847.—CLARKE's *Japan at First Hand*, 848.

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MERCANTILE AND AGRICULTURAL ECONOMICS

Improvement of agriculture has until recently involved only questions of farm technique. Better farming meant improved tillage and more scientific analysis of soils, a system of crop rotation, and the use of the latest improvements in farm machinery, and hence enlarged production. In brief, the whole conception of agriculture was that of a factory. The workers in this agricultural factory were all supposed to be skilled mechanics, that is, trained scientists. Generally speaking, "the workers were trained as horticulturists, soil chemists, or veterinarians, rather than as economists."¹

This attitude has been radically changed in recent years. The concept of farming has been broadened to include the problems of marketing and the organization of the farm itself, and a new and specialized function has grown up under the name of farm management. Under these new conditions the farm is no longer merely a factory for increased production; it becomes in a true sense a business and takes on all the responsibilities of a business. The inevitable result is that farming is compared more and more with the manufacturing plant and the store. In order that these comparisons may be accurately made and that no false impressions be

¹ E. G. Nourse, "What Is Agricultural Economics?" *Journal of Political Economy* XXIV, 375.

created, it is important at this time that we examine the relationships between these types of business. The following discussion will therefore include the following main points: (1) Farming as a business, (2) the influence of mercantile economics in the organization of the farm business, (3) the assumed differences between mercantile and agricultural economics, (4) certain conclusions which develop from this analysis. The aim in view is to consider the growth of farm management, the borrowings which farm experts have made from business principles developed in mercantile and manufacturing enterprise, and the alleged essential differences between farming and manufacturing or merchandising. In this discussion the so-called business principles of manufacturing and merchandising will be included under the term "mercantile economics." Agricultural economics will mean the "application of business principles to the farm."

I. FARMING AS A BUSINESS

When a department of the federal government was created to take care of agricultural problems it naturally ran to scientific studies. In the first place the department was filled with those who were primarily interested in increased production and with those who had been trained in agricultural methods. As the department grew in importance and called to its service experts from various colleges its ranks were recruited from those who were soil experts, agricultural chemists, and animal husbandmen. This was right and proper, since the prime purpose of the department was to increase the output per farm, to adapt crops to soil conditions, and to preserve the fertility of the land. Other phases of agricultural problems were left to shift for themselves. In fact in the early period the most important problem of all was increased production.

When one turns to the writing on agricultural subjects he finds, also, a reflection of this emphasis on agricultural science. It was not until after the opening of the twentieth century that books began to appear on "economic" phases of agriculture. In 1905 there was published a book with the title *Agricultural Economics*, by H. C. Taylor. This book was clearly an attempt to carry over the established economic method of discussion into the agricultural field.

Much of the terminology of the older economic texts will be found in it. But there is also an attempt made to discuss farming from the point of view of business organization. Such topics as the size of the farm, market prices, principles of valuing land are taken up. This is in short an early appreciation of the fact that farming is something else than mere scientific agriculture. A few years later another book appeared, under the title *Readings on Rural Economics*, by T. N. Carver (1911). Here the author is revealed as an economist who is primarily interested in rural social problems; and the effect of an earlier theoretical discussion of the distribution of wealth can be seen in this book. There is here, however, some realization of the farm as something other than a place for the study of methods of production; it is likewise a place to live. These two books show the crystallization of the idea that a farm must have a manager who can understand more than the mere problems of production.

Within the last few years several other texts have been published, bearing directly on the subject of farm management. As early as 1902 there was begun in connection with the Minnesota Agricultural Experiment Station a series of studies in the cost of production on the farm. These studies enlisted the interest of the United States Department of Agriculture to such an extent that it shared half the expenses of the investigation. The results of these studies were published in 1911.¹ In 1907 a series of lectures was published under the title *Farm Management*.² The author of this book had realized clearly the phase of agriculture which had theretofore been left neglected. "To market a product advantageously," he wrote, "is as essential as to produce it economically. In short, business methods are as important as production methods."³

In response to this new demand the Department of Agriculture organized the Office of Farm Management and the Office of Markets and Rural Organization, and many special bulletins have been issued from time to time by these bureaus. The latter office has been especially interested in the co-operative movement among farmers.

¹ U.S. Dept. of Agr., Bureau of Plant Industry, *Bulletin* 232.

² By F. W. Card, Rhode Island Agricultural College.

³ Preface, p. 5.

There was thus launched the new idea in agricultural economics. Farming was no longer merely producing more efficiently. Farming was a business, and the farmer was a business man as well as a scientist. "Farming is a business the same as banking or running a department store."¹ A distinct literature is growing up around this new subject of farm management. The primary purpose in the movement seems to be to carry into farming activities the principles which have been developed in other kinds of business. "Farm Management is the study of the business principles in farming. It may be defined as the science of the organization and management of a farm enterprise for the purpose of securing the greatest continuous profit."²

If farming becomes a business the farmer must take on the responsibilities of a business man. He must not only produce but he must also sell to advantage what he has produced. The two main points which he must henceforth consider are, first, what does it cost to produce these products, and, second, by selling at market prices, what profit is made on them?³ The farmer thus becomes more fully commercialized. The farm and the farmer are necessarily less independent and less isolated than before. To his study of physical and biological sciences the farmer must now add the social science of economics. This entails a study of marketing, and a study of marketing focuses the attention upon price formation. But one cannot analyze prices without dealing in some way with profits, and profits in their turn demand for identification an accounting for and an itemizing of costs. As a natural consequence, therefore, there is at once a call for farm records, farm accounts, and all the data necessary for a determination and comparison of costs. The farmer must provide all these things if he is to meet successfully the problems of a business manager.

It is from the point of view of farm management that the business of farming must find comparison with mercantile and manufacturing establishments. Since this movement was a later development than urban business, it was only natural that a dis-

¹ E. H. Thompson, *Farmer's Bulletin* 311, p. 5.

² G. F. Warren, *Farm Management*, Preface, p. 5.

³ Thompson, *Farmer's Bulletin* 511, p. 5.

tinctive influence should be carried over from the city to the country. It is now proposed to examine the borrowings by the new group of farm management experts from mercantile economics. This will be discussed under the three topics of terminology, principles, and methods.

II. INFLUENCE OF MERCANTILE ECONOMICS

1. *In terminology.*—The group of men who first undertook the development of farm management were for the most part those who had come to the task as agricultural scientists. There were a few who had been trained as economists, but they devoted their attention primarily to general marketing problems. As a matter of fact there had been no means offered to gain instruction in business methods so that the experts in farm management could equip themselves for the new work. As scientists their attention had been devoted very largely to questions of production and only incidentally to selling problems. They understood soils, they knew the principles of agricultural chemistry, they had specialized in the raising of horses or of cattle or of poultry, but they had not been trained in principles of business management. The agricultural college curriculum a few years ago rarely included even a general course in elementary economics. It was far more rare to find a course devoted especially to agricultural economics; and even then it was only superficially agricultural.

With the development of the farm-management idea, however, courses of a new character were organized. These had to do with the farm as a business unit, and attempted to apply business principles to agricultural problems. When it became necessary for some part of these courses to be devoted to the keeping of farm records there was again no means offered to secure the necessary basis of accounting knowledge. The very best that could be obtained was entrance into a general course in elementary accounting. The books and forms studied in such courses were those which had developed from experience in industrial and mercantile enterprises. It was quite natural, therefore, that these business forms and methods should have a profound influence in the shaping of farm records and farm accounts.

It was necessary to gather material for these new courses in farm management from actual practice. Those who guided this new study used in general the inductive method, for there was no other basis upon which they could begin than the experience of farmers. In consequence they went from farm to farm endeavoring to ascertain how the business was conducted and with what results. As has been said by one writer on the subject of farm management, "the best way to determine the best methods of conducting the farm business is to learn how the most successful farmers have achieved their success."¹ This method of study very naturally led to the making of surveys. Typical farms were selected and the investigators, trained in agriculture and experienced in farm methods, went from place to place collecting data. If those who laid claim to being experts in farm management had been able to secure only meager business equipment the conditions of the individual farmer may be left to the imagination. It was found in most cases that no records of any kind were kept on the farm that were in any sense complete or reliable. Certain investigations were frankly based upon the facts given by farmers' wives who "kept no accounts except in their head."² In a method of this sort there is obviously a very great chance for bias in the facts, and such bias undoubtedly appeared. The agricultural investigators, however, have frequently declared that the facts obtained in this manner were remarkably accurate, as had been confirmed by certain checks which had been made upon the memory of those who gave the information. In any case a vast amount of valuable material was accumulated.

The methods of dealing with the facts thus secured by the various investigations were very largely borrowed from what has been called in this discussion mercantile economics. In the matter of terminology, for instance, the writers on farm management have taken over the language of the mercantile economist. The very term "management" is adopted from that source. The definition of farm management usually contains some reference to

¹ Warren, *Farm Management*, Preface, p. 5.

² Cf. "What the Farm Contributes Directly to the Farmer's Living," *Farmer's Bulletin* 635.

"business principles," which can only mean the methods of conducting mercantile and industrial enterprises. The farm from the point of view of farm management becomes a "business organization" and is discussed as such with reference to "efficient use of capital," "farm incomes," and "labor incomes." In the language of this new study the farmer becomes an "entrepreneur," a "business manager." There is also a discussion of "capital investment," of "fixed" and "circulating" capital. Part of the returns to the farmer is now called "wages of management." The records of the farm business are called "farm accounts" and correspond, of course, to the mercantile accounts. In this portion of the field there is also a direct borrowing from mercantile language. There is the question of "depreciation" and the need for making a careful "inventory," and there are the "debit" and "credit" accounts. This same influence is also revealed in the definition of farm management itself. "Farm Management includes the selection, planning, organization, and development of the farm and the daily and yearly conduct of the farm business."¹ It may thus be seen that the language of mercantile economics has likewise become the language of this phase of agricultural economics.

2. *In principles.*—The influence of industrial and mercantile business, however, has been far more important than the mere contribution of terminology. It must be remembered that farm management is a study of business principles in farming. Some of these principles which have been taken over from urban business practice will be noted. For instance, in the matter of location, it is now well recognized that the problem of location is of great importance in the establishment of any industrial or mercantile enterprise. The business manager who contemplates a certain line of manufacturing should first analyze with great care the essential factors which determine the best location for his business. The importance of these different factors in location will naturally vary with the particular kinds of business, but the general principles are true for all types.

The principles of location have also been applied to the farm. Accordingly, detailed studies have been made of the determining

¹ U.S. Dept. Agr., Bureau of Plant Industry, *Bulletin* 236.

factors in selecting a desirable farm. It is true that these have not all been purely economic considerations. Other influences of very considerable importance have been permitted to enter, as will appear from a later discussion. An enumeration is, however, made of what have been called "factors of location." The two chief factors are said to be those of climate and soil fertility. Besides these general factors there are a number of subordinate ones, such as surroundings, rural telephone, transportation, market facilities, opportunities for schooling, church facilities, medical attendance, and social opportunities.¹ These factors have to do with the general environment of the farm. Besides these, a careful analysis is required of the farm itself. Such items as the following are to be considered: the farm layout, the lay of the land, the fertility of the soil, physical properties, drainage, water supply, improvements, healthfulness, taxes, roads.²

A survey of these factors of location will immediately show that they have an analogy in mercantile economics, in so far at least as they deal with the economic phases of the farm business. It makes no difference whether the business manager contemplates mining coal, copper, or iron ore, whether he considers undertaking the manufacture of shoes, clothing, or steel rails, or whether he expects to set up in business as a general merchant; there are factors of location which he must consider if he is to be successful. It is obvious, therefore, that the principles of business here are substantially the same for farm management as for industrial and mercantile management.

Take the problem of management itself. Business management may be defined in brief as the best combination of factors that will produce the highest continuous net profit. This means that a business must be kept well balanced. All parts of it must be adjusted so as to work harmoniously. Labor must be kept employed profitably at all times. The task of everyone employed should be adjusted so as to bring the right man into contact with the job for which he is best fitted. The manager must find the best use, or combination of uses, for his plant, whether it is a factory or

¹ Warren, *op. cit.*, chap. xviii.

² Card, *op. cit.*, chap. vi, pp. 56-62; Warren, *op. cit.*, chap. xix.

a store or a warehouse or a railroad. There is also a question of the main product in its relation to by-products. The large packers of meat have claimed that their profit arises from their use of by-products. The large manufacturers of steel have found a profitable use for slag. There are scores of instances where business managers have derived profit from by-products of their industry. It is a duty of the business manager to make the most of his opportunities in all these cases.

If one turns to the farm he finds that here again analogous problems of management arise. The farm manager has the task of determining the best combination of factors to produce the highest continuous net profit. He, too, must keep his farm business well balanced. There is for him the problem of keeping labor continuously and profitably employed. It is his duty to have work planned for the rainy day and for the off-season. He must make use of the by-products of the farm; he must adjust all the parts of his business so that they work together harmoniously; seasonal interstices must be filled up. These principles the farm-management leaders have been quick to learn from the experience of those engaged in mercantile enterprise.

The business manager, moreover, who is engaged in a mercantile enterprise has come to realize the importance of experience of past years, in all branches of his business, in order that he may lay his plans for the future. For this purpose he not only devised various methods of keeping accounts and records which should be of service to him in accuracy of detail, but he has also established his business policies for the guidance not only of himself but of all those who work with and for him. The manager of the farm is now being taught that he, likewise, must know his business. He, too, must keep accounts and records, and these accounts and records must be of such a character as to serve him for a guide in planning his business.

One thing needs to be said with the greatest emphasis and that is, that good accounting is the key to all successful administration, whether in farm, store, factory, or transportation company. This is a fact which farmers have been slower than other business men to accept. Good accounting means, of course, much more than mere keeping of cash accounts, or a record of receipts and expenditures. It means such a record as will enable the farmer to tell exactly at

the end of the year how much every part of the farm enterprise has cost him, how much it has brought him. By this means only will he be able to determine just where his losses have occurred and just where profits have been made. Until he knows this, he is in constant danger of one of the commonest mistakes, that of losing as much on one product as he makes on another.¹

3. *In methods.*—Certain terminology, then, and certain principles have been taken over from industrial and mercantile economics by those who are leaders in the development of farm management. It may be further noted that in addition there are definite methods of calculation, also, which have been adopted. There is, for example, the farm income. This is generally defined as being the difference between receipts and expenses. The term “expenses” in this case means the actual expenditure during the given period for hired labor, for seed, for machinery, etc. This method of calculating income is precisely like that employed in any mercantile establishment. There is in the farm accounts, also, a method of drawing up debits and credits which is practically the same as for general business. It may be said that the accounting forms that have been devised for keeping records on the farm are almost entirely built upon mercantile usages. The method of taking inventory is likewise very much the same. The items which are to be credited to the farm are handled in the same way as they would be handled in any other kind of business. There is here a difference in detail which in some cases is of very great significance, but on the whole the methods are the same. One lesson in accounting which the farmers have learned thoroughly from mercantile practice is that of charging up the items of cost. Not only their labor charge and a charge for all actual direct expenditures are itemized, but there are also numerous incidental charges which are included, such as veterinary expenses, dues to farmer’s associations, subscriptions for farm papers, and so forth.

Since the farm, although generally consisting of a small unit, is almost never a simple business, there has often been found a need for keeping separate accounts. Consequently, a single crop may have its own special set of records. This means, of course, the taking over into farm business of the general mercantile custom of

¹ Carver, *Principles of Rural Economics*, pp. 270-71.

departmentizing accounts. This practice is nothing more or less than the allocating of accounts.

This discussion has been carried far enough to show that the business of the farm is not so different from other kinds of business as to make it necessary to discover a complete system of new principles or methods. It seems fair to conclude that experience has shown that business is business, whether carried on in a factory, in a store, or on a farm, and that there is the same need for careful records, that the same terminology can be employed, and that the same methods of calculation can be adopted. There are differences to be sure, in many details, but the general experiences are the same. It now remains to take up the so-called essential differences between the farm as a business unit and the factory or store.

III. MERCANTILE VERSUS AGRICULTURAL ECONOMICS

1. *Essential differences.*—The agricultural experts, however, have not depended wholly on the principles of mercantile business. While they have applied many of these where application was easily made, from the first they have claimed that there exist certain essential differences between the farm as a business and the store or factory. "All attempts," says one writer, "to apply city methods of bookkeeping to farm cost accounts must fail as they always have failed."¹

One of the chief reasons why these differences have been claimed is that the business activities on the farm cannot be standardized ✓ in the same way that they are in other kinds of business. There is a difference, for instance, between machines in a factory and live stock on a farm, although both of these from a business point of view transform raw materials into finished products. Dairy experts are now accustomed to liken the milch cow to a machine. But, unlike the cow, the machine is never temperamental. Moreover, since the farm as a business is very complex, no matter how small it may be, there are usually, even on the specialized farms, many different kinds of activities with different ends in view. Even the smallest and the simplest farm units will have chickens, pigs, colts, calves, an orchard, and half a dozen different crops.

¹ Warren, *op. cit.*, p. 430.

This condition makes necessary a diversity of aim and practice unknown to other kinds of business. In these other kinds of business the plant is usually devoted to a particular service. However numerous and complicated the manufacturing processes, for example, they are all organized for a common composite result. This significance of purpose simplifies the organization and management. Under these conditions when the plant is equipped, when the machines are set up and started running, they remain very much the same day in and day out.

It may thus be seen that in any manufacturing plants or any mercantile establishments where these business activities are single in purpose and standardized in practice a comparison of results is made easy. Responsibility for output runs back finally to the man in charge of such plants or stores. That is, business managers may differ greatly in degree of efficiency, and the degree can be determined by a comparative study. Under standardized practice and conditions there is thus a check on managerial ability. This is not true, it is claimed, in regard to the farm manager. The farms are so different, the influences so varied, the factors determining results so uncontrollable, and the processes so unstandardized that no comparison is possible.

In the United States, as has been said, the farm has for its general unit the family; American farms are called "family-sized farms." This means that the energy of the entire family group is devoted to the various farm activities. Out of this condition there develops another essential difference between the farm and other types of business.¹ The family relationships are not the relationships of employer and employee. Work on the farm for the farm boys and the farm girls may have a far different aim in view from that of work in a factory or a store. There is in this farmwork an element of discipline which is entirely outside of economic relationships. There is, also, a process of informal training or a kind of apprenticeship connected with it. Furthermore, there is the question of the healthfulness of outdoor exercise and an element of social relationship which again take the work outside of mere economic calculations. In this respect, also, there is said

¹ Cf. B. H. Hibbard in Hoard's *Dairyman*, January 25, 1918, pp. 10-11.

to be a vital difference between agricultural economics and mercantile economics.

It has also been pointed out that the general problem of labor management on the farm is essentially different from that in other business. "The large area over which the operations must be conducted (there are some farms of 640 acres) makes it impossible to use factory methods."¹ This means that there can be no direct personal supervision over farm labor. It means, also, that farm-work is frequently interrupted by changing weather conditions, so that an entirely different kind of labor must be found at an instant's notice. It is also clear that there are no large groups of workmen on the farm to compare with those in factory or shop.

Another mistake, it is said, is made in comparing costs in industrial and mercantile establishments with costs on the farm, because the controlling factor in farm costs is the weather. "A mistake is made in comparing costs in mercantile establishments where the business is sheltered from the weather with business on the farm where the hazards of weather make the difference in costs."² The point is that the internal problems of the factory or the store, because they are shut off from the outdoor world by the four walls of the establishment, are essentially different in character from those on the farm that are open to all the changes of weather which are so important to farm production. It would probably not be claimed that the difference is so great between the farm and work in a shipyard, for example, which likewise cannot be protected from weather changes. Nevertheless, the essential difference is not in the interruption of labor by unfavorable weather conditions, but the fact that returns from labor in the one case depend upon favorable weather conditions, and in the other case upon direction of labor energy.

Such conditions as these have been emphasized by writers on the subject of farm management for the purpose of justifying certain fundamental differences between farming and other types of business, in calculating costs and in keeping accounts. It would not be difficult, of course, to show that there are just as complicated

¹ Warren, *op. cit.*, p. 596.

² Editorial in *Hoard's Dairymen*, February 8, 1918, p. 104.

accounting tasks in industrial and commercial life as those cited above. The question of joint costs in railroad accounting has long been the classic model of the Gordian knot for the accountant. In mercantile establishments, particularly, the cost problem has many intangible factors almost equal in difficulty with those on the farm. How much does it cost, for instance, to sell a shoe-string, or a bit of pink ribbon, or a hairpin, or even a hat or a dress in a large department store? The difficulty of the problem, however, should not be permitted to justify erroneous methods.

Some of these so-called essential differences need to be analyzed carefully in order to discover wherein the difference really lies and what consequences flow from differences in method. It is not possible to make a detailed analysis of each difference suggested. They will rather be classified under three main heads: (1) the farm as a home, (2) the calculation of the cost of raw materials at farm prices, and (3) the analysis of the farm income.

1. *The farm as a home.*—One of the main differences between the farm as a business unit and the factory or store is undoubtedly the relation of the home to the business. "The home and the business are so closely related on the farm that success depends to a large extent on the home."¹ The truth of this assertion will be readily admitted. The American farm should always have been primarily a home. All improvements on the farm, therefore, are likely to affect the home value, whatever their influence on production. It is possible to find many instances, which were more frequent in former years than now, of tradesmen who live in the rear of their stores and thus connect their home directly with their business. It cannot be said, however, that this is typical of commercial and industrial enterprise. The store and the factory usually are distinctly separated from the home. As the town grows there appear definite boundaries for the business section, for the factory district, and for the residential section.

Nevertheless, there is nothing in this difference between the city and the country to show any valid reason why these influences should not be carefully accounted for. There are in the city business many intangible factors to be recorded. The real estate

¹ Warren, *op. cit.*, p. 7.

companies are very careful to let these intangible factors appear in their accounts. As a matter of fact nearness to the business section or the factory district is a very large element in the valuation placed upon residential property. That these influences have worked differently in the city makes no difference in accounting principles. Unless the farm manager does disentangle these influences his management will be open to error. "Probably the greatest source of error and confusion in our farming accounts is to be found in the fact that the farm business and the farm home are not separate. This results frequently in burdening the former with the expenses which properly belong to the latter."

It is admitted that any consideration of this relationship between the farm home and the farm business that will bring reliable results is extremely difficult. These are intangible values which cannot readily find expression in our common denominator of values. But it should not be forgotten that they are none the less real. Any system of record-keeping that is to represent the farm business fully and accurately must give them place. They correspond in a general way to a good location for urban business and to the good-will in mercantile activities. These intangible values are cared for in the system of records developed by mercantile economics. Sometimes the item of good-will attached to a trade-mark or a trade name reaches up into the millions of dollars. These intangible values have often been bought and sold in the market. In any case they have been accounted for in the books. They must be treated likewise on the farm.

An instance of this phase of the subject is "community improvements." The items included in this term are such things as roads, schools, churches, neighbors, general healthfulness, and even the "lay of the land." It is easily seen that such factors as these may not affect the productivity of the farm. Good roads may reduce the cost of hauling, but they also enlarge the living area for the farmer. The other items affect the farm very largely as being a place to live. The result which follows from this situation is that a farm may have a "trading value" which is different from its value as a business. "Sometimes land that has very little agricultural

¹ Nourse, *Agricultural Economics*, p. 377.

✓ value has a trade value just as an old horse that is worthless for work has a trading value."¹

It has been claimed by those who write on farm management that the difficulty of accounting for these intangible values does not need to be met unless the farm is to be sold.² Such an attitude is not scientific nor is it a satisfactory one. These values, however intangible, are assets and, as will be shown later, they do enter into the accounts in a way that makes them unreliable. It should be admitted that while it is difficult to disentangle personal accounts and farm accounts such a process is essential to clear and accurate accounting. Mere difficulty ought to be no legitimate obstacle to their careful consideration. It might easily be pointed out that they are not more difficult to handle than many nominal accounts in commercial and industrial business. But more important than anything else is the fact that they frequently find expression in the monetary values which are attached to the cultivated acres. It has been said, for example, that "these community improvements often represent a value of \$1,000 an acre."³

There is another reason why this alleged difference between the farm as a business and other kinds of business should be considered. ✓ "The farmer lives at his place of business and pays no cash rent for the use of his house, while the fields and groves are nearly as much a part of his residence as the rooms in the farm dwelling."⁴ If, under these circumstances, the condition of the farmer be compared with the condition of the business man in the city the need for careful accounts of these values becomes apparent. It may be true that some of them can be measured only by the satisfaction they afford the owner of the farm. If they do enhance the value of the farm, however, they must appear clearly in the records.

✓ From this relationship between the home and the farm there arises another item for consideration. It has been said that the American farm is a family-sized farm. Since this is true all members of the family are supposed to contribute in some way to the farm activity and to receive from the farm something in return. Here, again, if the condition of the farmer as a business man is

¹ Warren, *op. cit.*, p. 517.

² *Ibid.*, p. 485.

³ *Ibid.*, p. 513.

• ⁴ E. A. Goldenweiser, "The Farmer's Income," U.S. Dept. Agr., *Bulletin* 746, 1916.

compared with the condition of the business man in the city the fact that the farm affords work for the children in the household must be noted. This work may be so severe as to become detrimental; on the other hand it may be of such a character as to promote the welfare of the children and to secure for them those very things for which the city man must pay a high price. It is, of course, a question of fact in every case whether the work for children on the farm is detrimental or beneficial. Nevertheless, if the farm is charged with their labor the farm must likewise be credited with what it returns to them.

This leads to the consideration of what the farm furnishes in general to the household. As a natural resultant from the condition already described, i.e., the relationship between the home and the farm, there is need to analyze carefully not only what the family gives to the farm but also what the farm gives to the family. There has been a general saying that the farmer gets one-half of his living from the farm. This was a rough-and-ready estimate of the relationship just mentioned. Recent investigations, however, tend to show that the farm furnishes more than this amount of the farmer's living. "The farmer derives two-thirds of his food and fuel from the farm and pays no cash for them. When the value is placed on these items, it is wholesale value which is much less than the price paid for the same articles by city dwellers."¹ It is again a question of fact as to whether this produce, which the farmer gets directly from his farm, is in general superior or inferior to that which an average city dweller buys at the retail store. Some estimates have been made of the money valuation of this produce which the farm furnishes. These estimates vary considerably in amount. It has been said, for instance, that as much as \$500.00² would be required to furnish the same amount of foodstuff if bought in the city in small lots. This item has frequently been neglected by those who deal with farm accounts.³ Such neglect is indefensible. There is a general human tendency by which the value of

¹ *Ibid.*

² Warren, *op. cit.*, p. 23; cf. pp. 24-25 for lower estimates.

³ Thompson, "What Profits the Farmer Receives," *Annals* (November, 1913), p. 179; cf. also C. W. Funk, *Farmer's Bulletin* 635: general average, \$421.17, p. 5; house rents, \$125.10; bought \$173.91, p. 6, foodstuff is 62 per cent of what farm furnishes; house, 30 per cent; fuel, 8 per cent.

the produce is minimized by the farmer and overestimated by those who are compelled to purchase the produce at the retail store in the city. Farm accounts should determine finally and accurately what the conditions really are.

This question of the relationship between the home and the farm enters also into the land-tenure problem. If absentee landlordism increases there is likely to be less and less attention paid to the home qualities of the farm, unless a long-time tenancy system develops. Changes of this sort, whatever they are, should appear in the farm records. Careful accounting is even more important where the land owner becomes distinct from the farm manager and the farm laborer than where the manager-owner gains a large share of his livelihood from his farm. Fairness to all parties is necessary in the bargaining between tenant and landlord.

There is still another feature of the relationship between the farm as a business and the farm as a home which needs to be noted. Man is like a tree in that he takes root to the spot where he has lived for a long time. Sentiment attaches to all his surroundings. When a man has brought a farm under cultivation he may find a peculiar attraction in field and grove which will enhance the value of the place to him. The time comes when he will not willingly exchange this place for another in which to live. "The farmer's location is generally permanent. Every beauty or convenience which he adds to his home are for him and his. Home comes to mean something to him and his children. Each improvement in buildings or equipment means far more than the possible profit which the change may afford."¹ Added to this, is the fact that moderately good judgment and reasonable enterprise will practically insure a farmer, who is not too heavily burdened with debt, against want in the days when his labor is no longer productive. "An intelligent and industrious farmer need look upon the future with no apprehension, except as the result of some unusual misfortune. . . . His support is secured to the end of his days. Even when he is no longer able to work himself, his farm will continue to yield him comforts of life."² Among these comforts of life there

¹ Card, *Farm Management*, p. 108.

²*Ibid.*, p. 95.

is this element of sentimental attachment which cannot be overlooked. If accurate records are to be kept on the farm, some way or other, no matter how difficult the task may be, this condition must appear in the accounts. Some kind of personal accounts must be set up for it. In any case it will appear in the accounts clearly defined or disguised in land value, depending upon whether or not an attempt has been made to give it separate valuation. Especially if any comparison is made between the farm as a business and commercial and industrial enterprises of the city must this item be determined.

2. *Calculating costs on the basis of farm prices.*—There is said to be another essential difference between the farm as a business and the factory and store. This appears in the principles of farm accounting as taught by the leaders in farm management and the principles of accounting established in mercantile economics. This difference has to do with the keeping of cost accounts on the farm where feedstuff is grown for live stock or for dairy herds. It is far more significant than a mere difference of method. There is a direct clash of opinion on a matter of fundamental importance.

For some part of the way in cost accounting the farm accountant walks side by side with the mercantile accountant. The purpose of cost accounts, for example, in both cases is professedly the same. "Since the object of cost accounting," says one writer on farm management, "is to help in studying one's business, it is evident that the interpretation of the results is the most important part of the work."¹ This statement means in the language of the mercantile accountant that the cost accounts have for their ultimate purpose an intelligent control of the business. This unity of purpose is given expression by the same writer when he says, "Men are now beginning to keep careful cost accounts and other records of industrial affairs of the business for the purpose of learning how to conduct the business more efficiently."² There is also a general agreement as to the advisability of keeping accounts for different activities clearly separated. And not only in purpose are farm

¹ Warren, *op. cit.*, p. 443.

² *Ibid.*, p. 428; cf. Card, *op. cit.*, p. 145; Carver, *Principles of Rural Economics*, pp. 270-71.

accountants and mercantile accounts agreed, but they are also willing to use similiar forms.

And yet, although the purposes and these superficial characteristics of form and method are in harmony, there is a direct issue on principle. The agricultural economists have gone dead against mercantile and industrial practice in the matter of charging raw materials. It is clear that this question becomes a matter of very considerable importance when it comes to a comparison between the farm as a business unit and the store or factory.

The theory held by mercantile accountants for taking care of raw materials is compactly stated by Montgomery in *Auditing Theory and Practice*, "The basis of value should be cost or market, whichever is the lower" (p. 24). This principle is endorsed by all reputable accountants and is almost the universal practice.¹ The reason which is offered for this principle of accounting is that the object of accounts is to know one's business for the purpose of better control. As one writer on farm management has declared, "No method is scientific that fails to count the cost."² If it be granted that a knowledge of costs is a kind of knowledge that is essential for the best management, then it must follow by the very meaning of the word that there should be determined the actual cost of material. It is also evident that an accurate judgment of how to dispose of the finished product cannot be secured without an exact knowledge of actual costs. "The cost of the finished product is the accumulated cost of the materials and labor that have entered into it. Unless you ascertain cost in this way, it is impossible to know the profit of any business."³ In a mercantile establishment this same principle comes to the front in the case of making inventory. The merchant cannot know the actual status of the business without this principle.

Contrary to this practice in mercantile and industrial enterprises, the agricultural economists have held to a farm-value theory. ✓

¹ Nicholson, *Cost Accounting Theory and Practice*, p. 24; Dicksee, *Accounting*, pp. 172-73; Esquerre, *Applied Theory of Accounts*, p. 171; Hatfield, *Modern Accounting*, p. 102; Gilman, *Principles of Accounting*, p. 60; Eddis and Tindall, *Manufacturer's Accounts*, p. 4.

² Warren, *Farm Management*, p. 158.

³ Evidence in Chicago Milk Inquiry, p. 5521.

According to this theory the feedstuff grown on the farm is considered as a finished product in itself, "completely marketable," although it may be fed to live stock or dairy cows. The principle is stated as follows by a writer on farm management: "The cost of feed is a factor in the maintenance of live stock. Where the feeds grown on the farm are fed to the live stock, they should be charged at the farm price. The farm price is the market price at the nearest regular market, less the cost of delivering it to the market."¹

Here a question of principle is clearly involved. The mercantile practice of charging raw materials at cost value has been called by one agricultural economist "a foolish practice" when applied to the farm.² Since, however, the principle in mercantile enterprise has developed from many years of experience and since it has received such wide endorsement, it is only fair to put the burden on the agricultural economists to show good reason for its rejection in farm accounts. A reason has, indeed, been offered in justification of this difference in practice. The raw materials on the farm, that is, feedstuffs, such as corn and hay, are said to be readily marketable. This means that a farm differing essentially from a factory or a store has a ready alternative use for its raw materials so that the raw products of today may, without change, become the finished products of tomorrow. This simply means that a farmer after he has produced a crop of corn may decide to sell his corn to the market rather than to his live stock. The mercantile principle, on the other hand, says that in the case of a dairy farm, for example, the feedstuffs on the farm, as well as those bought in the market, are the raw materials to be used in the manufacture of milk. Logic and consistent accounting practice would compell in this case, as in mercantile and industrial accounts, the application of the cost value.

¹ Boss, *Farm Management*, p. 171; cf. Warren, *op. cit.*, p. 45; Evidence before New York Commission; Nourse, *Agricultural Economics*, p. 376; C. E. Ladd, *System of Cost Accounts*, and *Farmer's Bulletin* 572, p. 3. The principle in this government report was taken from Professor Warren's discussion of it. The appearance of this principle in a government bulletin seems to carry with it a sanction of the U.S. Department of Agriculture.

² Warren, *op. cit.*, p. 45.

The position of the agricultural economist in this case is not sound. As a matter of fact, as will be shown later, not all the feedstuff is marketable or has an alternative use. But even granting that the position is sound there might still be nothing in this situation to justify a change of principle. The very purpose of cost accounting is to determine whether the farmer does right in feeding his corn to cattle or hogs rather than in selling it to the market. Careful cost accounts are the only possible basis for a reliable decision. Cost of production alone can give rise to the scientific method which counts the cost. In addition to this, unless the feedstuffs grown on the farm where live stock and dairy herds are kept are considered as raw materials of manufacture, the farm is not a single business unit. That practice cannot be a wise one, as shown by those who have written on farm management, that will divorce one part of the farm business from the rest.

It may be said, further, that this practice among farm economists is unwise and is bad accounting, not only because the enterprise is broken up into different units, but because this method does not show the actual condition of the business. A primary aim of cost accounts is to keep costs and profits distinctly separate. If this is not done there arises at once a great possibility for error. For example, if feedstuffs grown on the farm are all calculated at farm prices, which is the regular market price minus the cost of hauling to market, there is a very great danger of overestimating their value. These products while on the farm are ungraded; a large part of them, also, is unsaleable. "On most farms large quantities of cheap rough foods are grown for which there is no market or which cannot be transported profitably to market. Straw from the various grains, corn stover, fodder, ensilage, and grass aftermath, are examples of this class of feedstuffs." And yet if accounts are kept in the manner suggested by farm accountants, all these feedstuffs will go into the records, not only as if they were completely marketable, but also as if they were of first grade. In this case there is obviously an incorrect representation of facts. Such a lack of accuracy makes the accounts deceptive to the farmer himself as well as to anybody else who inspects the record. If a

¹ Boss, *Farm Management*, p. 127.

comparison be made on this basis, between the farm as a business and the store or the factory, the results will manifestly be unfair. In short there is in this method of accounting an element of disguised profits which is to be condemned by all accounting practice. Such records in commercial or industrial business would be said to contain what is called "book profits," which are profits that have never been realized. For the sake of accuracy and conservatism book profits are always to be avoided.

That this method used in farm accounts is a distinct weakness has been clearly shown in the case of the recent Chicago Milk Inquiry. When the farmers' records were produced in evidence before the Milk Commission, they contained this element of disguised profits. The dairy men had included the feed, when grown on their own farm, at market, not even at farm, prices. Since the feedstuffs were at that time held in the market at very high war-time prices and since the farmers themselves admitted that a very large part of the feedstuffs had been greatly damaged by early frosts, the inaccuracy in accounts was clearly revealed, and this inaccuracy was detrimental to the entire case of the milk producers. Under such circumstances the point at issue becomes more than a mere question of theory. It is a matter of very great social importance. In this particular instance the general effect was bad. The evidence of the farmers was discounted and the results of the inquiry were rendered unsatisfactory because there was no way of determining the actual cost of producing milk.

There is, of course, no law either social or economic, that will compel a farmer to feed the products grown on the farm to live stock. As a business manager he is free within a very wide field to do as he will with the raw materials in his business.¹ As a business man, however, the farm manager will be judged by business men on the basis of business principles. He must, therefore, conform to the accepted principles of business or show convincing reason why he refuses to conform. So far in the development of farm accounts the farm has been in the hands of agricultural economists. The responsibility for the introduction of the principle

¹ It should be pointed out, however, that if a large number attempt to market rather than feed these materials the market price would be substantially reduced.

of charging raw materials at farm prices rests with these economists. Their case has not yet been won. They have not shown convincing reason for not conforming with generally accepted business principles. They have sought and they continue to seek the actual cost of producing grain and hay and ensilage in order that they may compare these costs with the market price. There is, therefore, no obstacle which has deterred them from entering upon this very difficult task. Since they are already securing the necessary facts, there is coming to be less and less reason for nonconformity between mercantile and agricultural accounting practice.

3. *The farmer's income.*—A further point in farm accounting practice that deserves careful consideration is the principle used in the analysis of the farm income. A large amount of attention has been given in recent years to this subject by writers on farm management. It is, in fact, the focus of interest for those who discuss this question. The purpose of farm management, it will be recalled, is to secure the greatest continuous net profit. It is only natural, therefore, that attention should be centered upon the size and the character of the income derived from the farm.

The practice in question is the method of apportioning the farm income. This amount represents "the difference between the receipts and the expenses. It is not the net profit to the owner, for the interest on the investment and the value of the family labor have not been deducted."¹ It is, then, a composite return; it is the total amount which is to go to capital and to "unpaid" labor.² The difficulty in analyzing this amount rises from the fact that the farmer is very often the owner and manager combined, so that the return on his investment is so closely joined with his own wages of management that it appears at first as a single lump sum.

This farm income has been divided by agricultural accountants into two parts. One represents the interest on the investment and the other is labor income. The distinction between these two terms is made clear by the following definition: "The labor income is the amount of money that the farmer has left after paying all business expenses of the farm and deducting 5 per cent for interest

¹ Thomson, U.S. Dept. Agr., Bureau of Plant Industry, *Circular* 75, p. 6.

² Boss, *op. cit.*, p. 19.

on the money invested in the farm business."¹ The method used in dividing this composite farm income into the two general items is illustrated by data secured from certain investigations on New York farms.

AVERAGES OF 670 FARMS IN JEFFERSON
COUNTY, NEW YORK²

Average capital.....	\$9,006
Average receipts.....	1,890
Average business expenses.....	735
Receipts less expenses.....	1,155
Interest at 5 per cent.....	450
Income from unpaid labor.....	705
Value of unpaid labor (except owners).....	96
Labor income.....	609

From the foregoing illustration it is clear that the capital investment is first determined as the basis upon which the division of the farm income is to be made. The difference between the total receipts and the total expenses of carrying on the farm business is thus computed, which in this example is \$1,155. The capital investment of \$9,006 is then multiplied by 5 per cent in order to determine the amount of interest which is to come out of the total farm income. In this example the interest is \$450. This amount being deducted from the farm income of \$1,155 leaves \$705 for the labor of the farmer and his family. The average value of farm labor on these New York farms was calculated to be \$96 a year. The methods used in this calculation are not given. When this amount is subtracted from the income of all unpaid labor, there remains the final item of \$609 for the farmer. "This we call his labor income."³

It is on the basis of this return that the farmer is compared with business men in industrial and commercial enterprises. If the basis is unfair or incorrect then the comparison resulting will necessarily be unfair and incorrect. The points at issue in this method are obviously the determination of farm value and of family labor. It is easy enough to check up the general rate of interest which is the third item of importance.

¹ Warren, quoted in Carver, *Readings on Rural Economics*, p. 576.

² *Ibid.*, p. 577.

³ *Ibid.*

This practice among farm accountants has been called into review in order to show that it contains bad accounting principles, and leads to unjustifiable conclusions. The first difficulty with the method here employed is that no device is presented by means of which the investment in land may be determined. The practice in reaching conclusions in regard to equipment on the farm does seem to conform to general mercantile practice. It is arrived at by a record of actual expenditures and careful accounting of depreciation. But farm accountants have been strangely silent as to the methods which they have used in determining land value. There have been general, and more or less vague, assertions that touch upon this subject. "Rises in land values," says one writer, "are not included in farm income."¹ This, however, is not satisfactory. Some valuation was accepted as the basis of calculation. Was this the original cost? Was it less than the original cost? Was it the land value determined by a capitalization of income? Had there been an increase in land values in this district? If so, why? Furthermore, if the land values had risen and if a return of 5 per cent is demanded on this increase, why should it not be included in the accounts? These questions run to the very essence of accounting practice here. Another investigator has declared that "Normal values (not assessed values) were used in all cases. No amount was allowed for increase of value of land unless justified by new buildings, drainage, or other improvements."² What are normal values of land? How are they determined? These queries remain unanswered. An investigation was made in 1911 of the farm equipment on Ohio farms. The expert in charge of this investigation declared that "the value given for the bare land represents as accurately as possible the value exclusive of all improvements."³ This statement of principle is open to the same queries as the former.

One cannot discover from these declarations any clear idea of the methods of valuation which were employed. There is no help, furthermore, to be had from the census reports, from which

¹ Warren, quoted in Carver, *Readings on Rural Economics*, p. 582.

² Thompson, "Profits That Farmers Receive," *Annals* (November, 1913), p. 639.

³ L. W. Ellis, "Study of Farm Equipment in Ohio," U.S. Dept. Agr., Bureau of Plant Industry, *Bulletin* 212, p. 11.

much data has been taken for the calculation of the farm incomes. The working principle in valuation, however, has not been wanting in the field of agricultural economics. However uncertain it may be as to whether this principle has been employed or not by farm-management experts, a clear statement was made some years ago. "The net rent, or the share of the gross returns which under conditions of free competition is credit to land above what is necessary to keep land intact, is the starting-point for figuring the value of a piece of land."¹ This is, to be sure, a definite starting-point, even though the goal remains yet undetermined. Practically the same principle has been repeated by a more recent writer on the farmer's income. "The increase in the value of farm property, in so far as it is real, represents a capitalization of the increase in the value of the farm products. The farmer receives interest on the increase in the shape of greater returns for his crop."² No other principle for calculating the values of farm land and hence for determining the amount of investment has been definitely stated. The accounting practice among agricultural economists may, therefore, be fairly judged on the basis of this principle.

That this is a fundamental consideration in farm accounting there can be no question. At present the subject is apparently carefully avoided by writers in this field. Generally the method used by farm-management experts in treating the farm income has been a complete evasion of the whole subject. There is need for immediate consideration by those who are analyzing farm accounts. It does not conform to practice in mercantile and in industrial establishments.

If the principle of valuation stated above is now applied to the method used by farm accounts, to determine the labor income, the fallacy in it will become clear. The primary difficulty is that it is impossible to know, without further analysis, whether the accepted or assumed capital investment is high or low. Nor is there any principle yet pronounced by farm experts bearing on this question. If the capital investment has been made too high it is obvious that

¹ Taylor, *Agricultural Economics*, p. 188.

² Goldenweiser, *American Economic Review*, VI, 45.

the labor income will necessarily be too low. If, on the other hand, the farm investment has been made too low the labor income will in consequence be too high. This is due to the fact that the labor income consists of what remains after a return on the investment has been deducted. It is also evident that if the principle of determining land values, which has been stated, is used the capital investment moves up with the increase in price of farm products. Whether this rise in value is faster or slower than the increase in prices is not yet known. The probability is, however, that the increased valuation anticipates the rise in value of farm products and, therefore, permits a large speculative element to enter land valuation. If it be assumed, however, that the rise in value of farm land keeps step with the increase in price of farm products then *it will not be possible for labor income ever to increase*. This is obvious since the increased return on investment will necessarily absorb all increased returns on farm products.

There is some evidence to show that such has been the case in the United States during recent years. One writer on the subject of the farmer's labor income has declared that there appears to be some kind of "equalizing influence" at work on these labor incomes. His conclusion is, that "this equalizing agency must be the tendency for changes in income-producing power to reflect themselves in changes in land values. Labor incomes tend through the work of economic law to a level, and the variations in productivity in the different sections will be found in the differences in land values. Thus, it is not the wage-earner, the manager, nor the enterpriser who benefits by the social changes, but it is the owner of real estate."¹ There seems to be an element almost of naïve surprise in the manner in which this conclusion is stated. But a little consideration shows that such a consequence must inevitably follow from the method of determining the farmer's labor income. Increased value of land under the principle of valuation stated above absorbs all the increased returns from farm products. The capital investment, therefore, is the item that changes with an increase in returns, and not the labor income. As a matter of fact, if this principle of valuation be carried to its logical conclusion, there can

¹ P. L. Vogt, "The Farmer's Labor Income," *American Economic Review*, VI, 813.

be no labor income for the farmer which is to be attributed to his ability as a manager, that is, there can be no wages of management. The simple reason for this is that he immediately capitalizes all of his increased returns into the value of his farm. Then, by calculating 5 per cent on this increased capitalized value, he arrives at the same point for his labor income that he had before.

There is, of course, no reason for alarm, even though the owner of the real estate, that is the farmer, alone benefits by the so-called social changes, when one remembers that two-thirds of the owners of farms are also managers, enterprisers, and farm laborers. It cannot be any cause for dismay to learn that a farmer has become wealthy, not because he is a farm manager, but because he owns a farm. The ultimate consequence is the same: the man is well to do.

A further weakness in this method of dividing the farm income appears when the attempt is made to compare conditions on the farm with those in the city. However unwise such "odious comparisons" may be, they are nevertheless constantly made. A very great deal of discontent has undoubtedly arisen from such comparisons. Since they will be made whether wise or unwise, there is here a further argument, if any is needed, for a fair and accurate basis of accounting. It has been shown by certain investigators that the labor income on the farm has not increased substantially since 1900.¹ "The labor income of the farmer," it is said, "appears to be subject to the same laws as the labor income of those in other industrial fields."² This question is discussed from the point of view of the general social situation; and the agricultural accountants are sowing the seeds of a social unrest that the inherent facts of the situation do not appear to warrant. Under the principle of valuation which has been cited, it is manifestly impossible for the farmer's labor income to increase. Here, once more, is the old problem of one trying to lift himself by his own boot-straps. The greater the return from the farm, with the capitalization at the prevailing rate of interest, the greater will be the value of the farm investment. If, in turn, this increased farm investment must first receive from the annual farm income its regular return of 5 per cent, there is and can be no increase left for the farmer's labor income. Such a system

¹*Ibid.*, pp. 809-20.

²*Ibid.*, p. 813.

of accounting permits the farmer to be a poverty-stricken farm laborer at the same time that he is becoming a wealthy farm owner. There is certainly some fundamental difficulty with an accounting system that permits such an anomalous condition.

It is to be pointed out, further, that such a system cannot give a fair accounting to the tremendous increase in land values that has taken place in recent years. It has been calculated that the average annual increase in value of farm property between 1900 and 1910 in the United States was \$2,055,000,000. This estimate gives an annual increase of \$323 for each farm in the United States, of which about \$242 is estimated to be the increase in the value of land itself.¹ These figures from the census report show that the farm has been receiving every year an increase in value of \$242 on the average farm. During the same period his labor income is said not to have increased substantially. In the Middle West, where farm lands have increased very rapidly during recent years, the statistical abstract shows the following estimates:²

State	1900	1910
Illinois land value.	\$1,514,113,970	\$3,090,411,148
Indiana land value.	687,633,400	1,328,196,545
Iowa land value.	1,256,757,080	2,801,973,573

✓ This increase of farm value has been in farm property alone and equals an increase of 109 per cent in a ten-year period. A part of this increase is no doubt pure speculation and was never paid. It is what has been called "the farmer's share in the increase of the nation's wealth."³ The system of accounting by farm experts does not separate the speculative element from the real value. As a matter of fact the method used permits the speculative element free access to the capital investment upon which a 5 per cent return is demanded before the labor income is determined. It follows that this method of accounting opens a way to an overcapitalization of the farm business that has been so greatly deplored in other kinds
✓ of business. The farm is thus permitted to demand a 5 per cent return on inflated farm prices.

¹ Goldenweiser, *American Economic Review*, VI, 45.

² *Statistical Abstract*, p. 127.

³ Goldenweiser, *op. cit.*

There is also a situation which developed from this method of accounting that makes a comparison with other kinds of business unfair. It has been said frequently by farm experts that many farmers are making no labor income whatsoever. Some are in fact receiving a "minus labor income." "In one investigation one farmer out of every three paid for the privilege of farming."² It has also been declared that a very large percentage of American farmers are now living on the interest of their investment and that they "do not receive anything for their own wages."³ It would appear that a careful analysis of this method of accounting might explain such a condition as a minus labor income. In other kinds of business it would mean simply that the capitalization was too large or that the management was not efficient. If land is held at a speculative value, which anticipates all possible increases for the next fifty years, and if on the basis of these inflated values there is first deducted a 5 per cent return, it stands to reason that the labor income item must suffer. There seems to be no valid reason why the farmer's labor income should not be deducted along with other labor expenses before the return on investment is determined.

It has been said that the capital investment on many farms is too small an item to be left for final consideration, and that since everyone can know what money is worth through the prevailing interest rate, but cannot assign a value to the farm manager's efforts, therefore, the return investment at the prevailing rate of interest should first be deducted in order to isolate the labor income to the farm manager.³ At the same time it is admitted that "the term 'labor income' is very readily understood by farmers because it is directly comparable with the hired man's wages when the hired man gets a house, a garden, and some farm products."⁴ The logic of this argument is not clear. There is a prevailing rate of interest. There is also the readily understood term "labor income." So far as definiteness is concerned one may as easily be used as the other.

Further defense of the accounting practice has been made. An instance was cited of a farm valued at \$2,000 with an annual farm

² U.S. Dept. Agr., *Bulletin 41*, p. 11.

³ A. G. Spillman, quoted in Carver, *Readings on Rural Economics*, p. 635.

⁴ Carver, *op. cit.*, p. 577.

⁵ *Ibid.*

income of \$600. It was assumed that the average hired man's wages was \$400. This left a margin of \$200 for a return on investment. This sum would mean a return of 10 per cent on \$2,000. If, in contrast, a farmer had a capital investment of \$20,000 and received \$2,000 above expenses, he would have left, after deducting \$400 for his labor, a return on his investment of 8 per cent. It is difficult to see why the smallness of the capital item in the first case would be a misrepresentation of facts. After all, the returns on capital should be what the manager can make out of that capital in any given enterprise. If he works for another man his labor may bring him only what is paid to other workmen, but as a controller of capital and as a manager of the farm business he makes, by a judicious use of the capital, a high return. This return may as readily be accredited to capital as to labor. It will, in fact, contain an element of wages of management, which probably can be identified only with very great difficulty. The method would, however, avoid the untenable position of fixing the farmer's labor income at a definite figure, in disregard of the sum total of his returns.

If it be recalled that one distinction between the farm and other kinds of business was said to be the fact that whether hazards were greater in the former case than in the latter, it may be argued further that this fact makes the method used by farm accountants even more unsatisfactory. Since factory methods are more standardized than farm methods it should follow that the difference in returns between factories would depend upon the degree of effectiveness in management. On the farm differences in returns could depend more directly on the uncontrollable weather conditions. In the latter case managerial ability might be equal under a condition of greatly varied returns. In the former case this could not be true. It could be argued, therefore, that farm accounts should attribute the variable factors in returns to the farm plant rather than to the manager.

The relationship between the farm as a productive unit and the farm as a home must be noted in the light of this principle. There are in this relationship certain intangible values which have found monetary expression in the value of the farm. Under the present system of farm accounts it is possible to demand a 5 per cent

return on these intangible home values which have not increased the productivity of the land. It is the duty of the farm experts to devise a method of isolating these items. So far this has not been done. The present method only obscures the issue.

Another question arises under this method of accounting for the various elements in the farm income. How does the tenant fare? In theory the tenant cannot afford, economically speaking, to pay except for the productive elements on the farm. To be sure, he must live, as every farmer must live, on or near his farm. He expects, however, a return on these things for which he has bargained. What are the facts in this case? In the United States one farm out of every three is rented (37 per cent in 1910). There are in general two methods of renting, one is on a share basis and the other on a cash basis. The essential difference in these two methods of renting is the difference in risk. In the former case the landowner shares with the tenant all the weather and other hazards in crop production. In the latter system the tenant assumes all these risks and contracts to pay a definite lump sum.

As might be expected the returns to the landowner are different under these two systems. In general the return to the tenant in both cases is relatively larger than the returns to the landowners. "We shall see later that the tenants in this area make a considerably larger labor income than the owners."¹ From another survey it was concluded that for the year 1911 the tenants received on 124 farms 7.3 per cent on their invested capital. An investigation on certain Iowa farms showed a return to the landowners of 2.3 per cent on a cash-renting basis and 4.28 per cent on a share-renting basis.² Another investigation of the conditions on New York farms has led to the conclusion that "on any given capital the tenants are making more money than the owners."³

An explanation for the higher return to the tenant has been offered by the farm experts. It is, in brief, that the tenant has a relatively larger capital outlay than the owner. That is to say that

¹ "Practice in Chester County, Pennsylvania," *Farm Management*, U.S. Dept. Agr., January, 1916.

² Iowa Experiment Station, *Bulletin* 159, pp. 166-69.

³ Warren, *Farm Management*, p. 312.

with a certain amount of capital he can control a larger amount of land.¹ From the survey of the method which has been used in analyzing the farm income it will appear, however, that another explanation can be found. Since a 5 per cent return on the farm value is first deducted before the farmer's labor income is determined where the farmer is likewise the farm manager, it is clear that a 5 per cent return on any land valuation, that is less than the total farm income, is assured. When the landowner, however, must bargain with a prospective tenant it appears that this 5 per cent return on the former land valuation cannot be assured. It would seem that the obvious explanation is that a part of the valuation is not derived from the present productivity of the land, but from a speculative, that is an inflated valuation. Conclusions that have been drawn from certain investigations lend force to this view. "If most Iowa farm owners," it is said, "believed that land would not advance in price, they would sell at the market price and put the money at interest. They could get 4.10 per cent on time deposits, or 5.5 per cent on farm mortgages, at a time when cash rent is 2.3 per cent and share rent is 4.28 per cent. At present the landowners believe the advance in price of land will make up for the difference between cash rents and the time deposit rate, or between share rent and the farm-mortgage rate of interest. They prefer to hold their land on this speculative basis."² It is plausible to assume that this difference in return to farm owners and tenants is really due to an overvaluation of farm land; but if this is true in the case of tenants it is obvious that where landowners are also farm managers they are demanding a 5 per cent return on all speculative value.

IV. CONCLUSION

The importance of the so-called essential differences between the farm as a business and the factory or the store makes it worth while to attract particular attention to these points. It is not merely a question of method or of theory. Far-reaching economic and social influences are bound up in this whole question. Both sides cannot

¹ Thompson, *Annals*, L, 180.

² Iowa Experiment Station, *Bulletin* 159, pp. 166-69.

be right. Today the weight of opinion and of practice is on the side of mercantile economists. Nonconformity in principle and method by agricultural economists must be justified by a convincing argument. Neither expediency nor difficulty is a sufficient justification. In order that the main points contained in this discussion may be easily surveyed they are here assembled and numbered.

1. This discussion has called attention, in the first place, to the recent development of a new view of agriculture. Farming has ceased to be a mere matter of production. The farmer is no longer a mere agricultural scientist. The farm is now considered a business and a farmer now becomes a business manager. This means that farming takes its place among other kinds of business and that the farmer joins the ranks of business men. Under this condition the farm management must stand the tests applied to other kinds of business. The farmer also must meet his responsibilities as a business man. In other words, farming is now to be compared with mercantile and industrial enterprises.

2. It has been shown also that the leaders in the new movement of farm management have come to their task somewhat poorly equipped in the matter of business training. They have been acquainted with the farm as a productive unit, they have studied the principles of scientific farming, and some of them have examined certain of the chief marketing problems connected with farm products. These men have borrowed very largely from mercantile economics; their aim has been to apply "business principles" to the farm. There is, then, no independent system for the farm manager; there has been only a modification or adaptation of the principles and methods used in mercantile establishments. It is, of course, right and proper to take advantage of the age-old experience of business men. This is exactly what the leaders in the farm-management movement should have done. Their chief borrowings have been in matters of terminology and forms for records and accounts. A large body of principles has also been taken over.

3. The main portion of this discussion, however, has had to do with certain so-called essential differences between the farm as a

business and other kinds of business. Claims have been made by the agricultural economists that there are certain mercantile principles that will not work on the farm. One difference that has been discussed in detail is the relationship of the home and the farm. A second difference is the principle employed by agricultural economists in caring for the raw materials, i.e., for feedstuffs that are grown on the farm and fed to live stock. A third main difference, and one that is far more fundamental in character because it underlies the other two, is the principle used in analyzing the farm income. This becomes a matter of special significance when it is made the basis for conclusions on general social questions. It is contended here that on these three points the farm experts have been in error. They have rejected the principles that have developed in mercantile business and they have used in their place the ones which they have felt would apply to their own particular problems. In doing so, however, they have opened the way for a very unfortunate misrepresentation of facts.

It is especially unfortunate because upon these facts have been based certain conclusions which will stand or fall according to the soundness or unsoundness of the principles employed. As an example of these conclusions the following quotations are given: "On the whole the income of the farmers in this country even when we include as a part of the income those things consumed on the farm where they are produced is certainly not more than sufficient to pay 5 per cent on the investment and ordinary farm wages for the labor they do, and it is probably considerably less than this."¹ The tendency appears to be "that social change reflects itself in land values rather than in labor incomes."² "Many farmers would be better off financially if they sold their farms and loaned their money at 5 per cent and hired themselves out at current wages."³ "In the marked disparity between the rate-of-wages increase and land-value increase, may be found the basis for some

¹ Spillman, "The Farmer's Income" in Carver, *Readings on Rural Economics*, p. 635.

² P. L. Vogt, "The Farmer's Labor Income," *American Economic Review*, VI, 814.

³ Thompson, "Farm Bookkeeping," *Farmer's Bulletin* 511, p. 22.

of the serious problems confronting communities at the present time."¹

It is against such conclusions as these that the present discussion is aimed. There may be here the basis for widespread social discontent. If farm bookkeeping constantly shows returns that are discouraging to the farmer, the effect is of great concern to all people. There is no question about the essential importance of farming as a business; it must go on. There can be no differences of opinion about the question of fair return to the farmer. There may be serious question, however, about the method of accounting that misrepresents conditions. It is unfair to say that many farmers would be better off financially if they sold their farms and loaned their money and worked for their neighbors, when the records upon which the conclusion is founded are based upon a system of accounting that claimed the prevailing rate of interest on inflated, speculative land values. It certainly cannot be disputed that the sum total returns from the farm are all the farmer can count upon for his subsistence and his savings. But these total returns are of two sorts, one tangible, the other intangible. Both of these must be taken into consideration.

There seems also to be little doubt that the farm experts have done work that is of very great value in toning up the entire farm business. They should be open to criticism on their methods, however, as all other business experts are. It is only fair to check them up by their own figures. Under present conditions they cannot be consistent with themselves. It is impossible, for example, to make the point that there is developing a serious problem in farm communities at the present time, because of the marked difference between rate-of-wage increase and land-value increase, when

¹ Vogt, *op. cit.*, p. 820.

For the good moral effect which may result from it, the following quotation is given which summarizes returns on mercantile and industrial enterprises. These should be compared with the admitted returns on the average American farms. "Leaving out of consideration the banking, railroading, and public utilities corporations, referring only to those that have to do with trade and industry, we find that there are about 250,000 business corporations in the country. The astonishing thing is that of those over 100,000 have no net income whatever. In addition, 90,000 make less than \$5,000 a year, while the 60,000 remaining, the more successful ones, make \$5,000 a year and over" (E. N. Hurley, *Printer's Ink* [December 9, 1915], p. 97).

the system of farm accounting does not permit the labor income to increase, and when farm investigations lead to the conclusion that the farming population of the United States, an aggregate of thirty million people, has a larger average income per family than any other equally homogeneous group of individuals of anything like the same size anywhere else in the world.¹ Inconsistencies of this sort rise from erroneous principles. Such errors should be speedily corrected.

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¹ Goldenweiser, "The Farmer's Income," *American Economic Review*, VI, 48.

THE CATTLE-LOAN COMPANY

I. INTRODUCTION

In the face of an insufficient European food supply we are today called upon to furnish beef in large quantities to the allied armies. Even before the outbreak of the present war beef production was a serious problem in the United States. From 1909 to 1915 the amount of production decreased from 0.56 to 0.366 beef animals per capita, and with some increase in production reached only 0.397 in 1917. The need for an intensified production of beef cattle in this country will not end with the closing of the war; it will continue even beyond the period required for the rehabilitation of the beef-ravaged countries of Europe. Since it has been estimated that about 75 per cent of all cattle operations are carried on by means of borrowed capital, it can readily be seen that cattle production is essentially dependent upon adequate financing.

In the early days, when the settlement of the territory east of the Mississippi was taking place, there was very little need for the extension of credit. The opening of the vast territory west of the Mississippi, which became available to the cattle grower at a merely nominal price, gave a great impetus to the cattle industry. Commission companies established in the meat-packing centers realized the opportunity to earn profits and to control the industry by lending money to the cattlemen. Equipped usually with small amounts of capital, and with no adequate system of inspection and supervision, they lent money widely and injudiciously. The industry of this period was very chaotic. The cattle themselves were "longhorns," a wild, inferior feeding type; the ranches were unfenced and cattle "rustling" was common; enormous losses resulted from insufficient water in summer and lack of feed in winter. Eventually the range became overstocked, and in 1895 and the few years following, the cattle

raisers suffered such heavy losses that they were unable to repay the loans, causing widespread failure among the commission firms doing business at that time. Cattle paper became very unpopular, and the stigma remained for many years. The present period of cattle financing began at about the opening of the twentieth century. While pasture lands have decreased to a pitiful fraction of their former size, the transition has brought system and stability to the cattle industry. The ranches are now practically all fenced, the cattle are an improved type, disease is well controlled, and "rustling" is over. Water is supplied by engines or Artesian wells, and adequate feed is stored for the winter. Skilled executives trained in approved business methods administer the affairs of the modern ranch. Cattle raising has become a specialized industry.

There were about three classes of institutions lending to cattle growers in the early part of the century: (1) the small state banks over the country, which were limited in their loans to 25 per cent or less of their capital stock and surplus, and which could seldom accommodate any except the small local feeder or grower; (2) a few large commission firms which lent almost altogether on feeder cattle, with the object of increasing the commission business; (3) the large national banks, limited to 10 per cent of their capital and surplus in their loans to any one person, unable to accommodate many of the large ranchmen, and with no credit machinery to inspect and supervise distant loans after they had been made.

Thus the national credit structure lacked a form of organization which could make unlimited loans on cattle, and which possessed machinery for adequate investigation of prospective loans and careful supervision of consummated loans. It lacked, moreover, a form of organization that could serve the cattlemen as a broker between the borrower and the investor, and thus distribute the available capital into the proper channels. Cattle-loan companies which could perform these necessary functions have existed in various forms for many years, but only in the past decade have they increased rapidly in numbers and attained a great perfection of organization.

II. TYPES AND LOCATION OF CATTLE-LOAN COMPANIES

Modern cattle-loan companies are divided generally into independent companies and those affiliated with state or national banks. The capital stock and surplus varies from \$25,000 to \$750,000. This is usually subscribed, in the case of the affiliated companies, by the directors and stockholders of the allied bank, and in certain cases friends of the men who are subscribing the majority of the capital stock have been admitted. The independent concerns as a rule have a smaller amount of capital stock, although there are a few independent companies throughout the country that are as large as the allied organizations. The independent companies, moreover, do not possess several distinct advantages which belong to companies affiliated with a strong bank. Generally, therefore, they are not as strong financially as the allied institutions.

In the case of a loan company connected with a large bank, the officers and their staff are as a rule also officers of the bank. Since, however, they are chosen because of their superior knowledge of every angle of the cattle industry and cattle loaning, independent companies often have as competent executives and staff as are the allied loan companies.

The majority of the best loan companies, both affiliated and independent, are incorporated. While many are organized and incorporated within the state in which they operate, it is rumored that the majority are incorporated in the state of Delaware.¹ This is probably true and is due to the advantages of smaller taxes, smaller organization fees, and certain legal advantages given by Delaware. There is an occasional institution that is organized as a joint-stock company. The affiliated companies are usually connected with some of the large live-stock national banks located in every packing center in the United States and ordinarily owned and controlled by some of the large packers.

A large majority of the companies are located in the chief packing centers. These, together with the ones on the Pacific coast and those in New Mexico, constitute practically all of the large companies in the United States. It is in the meat-packing

¹ The truth of this statement could not be confirmed because of unsystematic filing in the office of the secretary of that state.

centers that most of the live-stock business is concentrated, for it is here that the stockmen naturally go in search of money. There is the advantage in such a location that it is often possible for the loan company to inspect the cattle to be purchased in the market. It is also an advantageous position in which to guard against the illicit marketing of cattle by dishonest borrowers. Moreover, these centers are the vantage-points from which all important events and movements affecting the cattle industry are best observed. And finally, since the packers were the first to discover the opportunity to establish cattle-loan companies, it was logical and easy to connect them with the existing live-stock banks, using the same building and officers.

III. TYPES OF CATTLE LOANS

Loans made by cattle-loan companies are divided generally into three classes. These comprise: (1) feeder loans, (2) stocker loans, subdivided into loans on cows, loans on young stock, and "summer loans," and (3) dairy loans.

Feeder loans are made on beef steers which are ready to go into the last stage of feeding prior to their sale as finished beef. Their age will vary in different regions according to the custom of feeding either young or aged steers for market. Loans on feeder cattle are made to mature within ninety to one hundred and eighty days, according to the age of the steers and the length of time they are to be fed. Loans of this type are usually not renewed. The interest rate will vary according to the region under consideration, the conditions of the money market, and the conditions surrounding each individual case. As a general rule, however, the rates will average from 8 to 9 per cent in the West and Northwest, and from 6 to 8 in the Central West.

It is customary to lend occasionally as much as 100 per cent of the purchase price of cattle for feeding. In such cases the cattle must be considered of good quality, and the borrower must be a good moral risk with ability. He must have adequate watering facilities and shelter and sufficient feed to fatten the cattle completely. It is usually insisted that the feeder show enough additional responsibility to protect the company fully, for he must

assume (1) the expense of feeding and handling, (2) interest on the borrowed money, (3) all expense incidental to moving to market, and (4) all the risks concerning declining markets, disease, and other contingencies. If the risk does not warrant a loan for the entire price of the cattle, it may be scaled down to as low as 80 per cent of the total value.

Paper based upon loans on feeder cattle is extremely popular. The chief reason for the preference for this class of loans is their extraordinarily liquid nature. Feeder cattle are kept only a short time, never exceeding one hundred and eighty days, and are then marketed and slaughtered. To the investor who buys paper with a maturity of six months these loans perhaps appeal more strongly because in the event that it becomes necessary to go beyond the loan company to the borrower for the payment of the loan this will be less difficult when the cattle are ready for consumption. From the viewpoint of the commercial banker it is certainly the most desirable class of loans.

In addition, loans on feeder cattle become more valuable each day, as a steer on full feed will put on from one and one-half to two pounds of flesh daily. As the animal becomes heavier the quality of the beef also improves and the value of the steer is doubly increased. Steers in the feed lot are not subject to the same vicissitudes of the weather, disease, and accident as are stocker cattle. Paper based on loans upon feeder cattle possessed of these advantages ranks with the best commercial paper.

One division of stocker loans is made upon breeding stock. This does not include registered herds, for the reason that the amounts necessary for each individual animal and the risks attendant on such loans are too great for the cattle-loan companies to assume. Loans on cows to be used as breeding stock are made for six months' time and may be renewed from two to four times if the conditions surrounding the loan continue to be favorable. The margin required on such loans will vary according to the same factors that enter into the making of feeder loans. These loans are considered long-time advances. Cattle of this sort are not so easily marketed as feeder cattle, the loans are not liquid, and the margin of safety required is greater than for loans on feeder steers.

The percentage advanced on such loans may be roughly stated as about 50 to 60 per cent of the total value of the cows. The most desirable feature about these loans is the fact that the mortgage given on the cattle, as security for the loan, applies to the offspring. Thus not only does the security increase in value, but as the calves are sold the notes are liquidated. A loan made for eighteen months on a good herd of breeding cows will practically always be liquidated by the sale of the natural increase alone.¹

Stocker loans of another sort are those made upon young steers and heifers intended ultimately to be marketed. These are also made for periods of six months, with a probable renewal of from one to three times. The margin required for this class of loans is also larger than for loans on feeder cattle. Since stockers are expected to be kept for growth, a loan on them is not considered as liquid as a feeder loan, but there is always a market for the stockers. Cattle-loan companies take the view that a good stocker loan to the right person is as desirable as any other. John Clay² says that a loan on stock cattle is gilt-edged when prices are advancing, but that when prices are declining nothing is poorer. It is indeed certain that although these loans are now absolutely safe, since stock can be sold at any time without a loss, a loan company must be conservative in making them. There are several cattle-loan companies that lend almost exclusively on stock cattle, and their operations over a long period of years have been entirely successful.

The third division of stocker loans is comprised of those called "summer loans." This is a special type found only in the West. Here, for example, a rancher will borrow the funds necessary to purchase a thousand head of stock cattle. He will place these on pasture during the summer and in the fall will sell the majority of them, keeping only those for which he has the necessary winter feed. These loans are considered safe, since they are for a short period of time, and since the ranches are practically all fenced.

In addition to loans on feeders and stockers, there is a third class called dairy loans, made for the purchase of dairy cows. They are long-time loans and are usually paid by monthly instalments

¹ Statement made by Beverly D. Harris before the Kansas Live Stock Association, Wichita, February 9, 1916. "Cattle Paper," p. 13.

² President of the firm of John Clay & Company, Chicago.

from the proceeds of the sale of butter fat. Since they are not considered liquid and cannot be rediscounted or readily sold outside of the district in which they are made, they are very infrequently made by cattle-loan companies, and instead are usually made by local banks, which are in a better position to give them the necessary attention.

IV. THE CREDIT ANALYSIS MADE BY THE CATTLE-LOAN COMPANY

1. *Steps in the making of the loan.*—The cattle-loan company makes loans direct to the borrower and through the local bank. While many of the larger loans come direct, probably as many of the smaller ones are made with the local bank as with an intermediary. To facilitate the explanation of the steps which the cattle-loan company takes in granting a loan, it is assumed that the transaction begins with a written inquiry direct from the prospective borrower, who is unknown to the company. There are minor variations in the practices of different cattle-loan companies, but in the larger institutions, which make the major part of their loans in the range states, the process in all practical respects is the same.

After the preliminary inquiry has been made the cattle-loan company sends the prospective borrower a form for an application for a loan. This contains a brief statement as to the residence of the borrower, his general financial operations in the past and at the present, the amount of loan desired, and a detailed description of all the cattle which may be available as security for the loan. This is filled out completely, signed in the presence of a witness, and returned to the company.

If there is nothing grossly unfavorable in this application a blank financial statement is forwarded to be filled out in detail and returned. The form of the statements used by the various companies is in no two cases exactly alike.¹ These generally contain a detailed balance sheet and information concerning contingent liabilities, insurance, title to property, and references. The truth of this statement is attested before a notary public. Practically all companies require the prospective borrower to submit a financial

¹ A composite statement containing certain innovations of the writer can be found in a thesis entitled *The Cattle Loan Company*, in the University of Chicago libraries.

statement as a condition precedent to the granting of credit. There are three excellent reasons for this requirement. In the first place, all paper that is taken to a Federal Reserve bank for discount must have accompanying it a financial statement of the signer of the notes. In the second place, a statement of the borrower is necessary as a safeguard to the business. Since the loan company has loans outstanding to several times the amount of its capital and surplus, it must insist upon a substantial margin of responsibility behind the loan, otherwise a series of injudicious loans would leave the buyer of the paper "holding the bag." In the third place, there is often the same continuity of loaning in the cattle business as in commercial lines. In such cases the general financial ability of the man is very important, and a recent statement is a guide to the amount of credit to which he is entitled. As a general rule the majority of cattle raisers realize the benefit of a property statement to themselves and to the loan company and rarely object to making one of these.

The third step in the process of making a cattle loan consists in having the borrower fill out and return to the company what is known as a "brand sheet." This gives in both illustrative and descriptive form the exact holding brand on the cattle of the borrower, as well as all other brands which may be on them. One of the advantages of such a sheet consists in its accuracy. In all subsequent dealings the cattle may be identified exactly. With the aid of such a sheet the loan company determines from the county clerk in the county in which the borrower resides whether any previous loans have been made on these same cattle. The company also uses this sheet in investigating the legality of the brands given, to make sure that the brands have been registered with the county clerk, to determine that the brand given is the holding brand of the borrower, and to make sure that the legal title is clearly vested in the person seeking the loan. In the same connection the brands are investigated in the various cattle-raisers associations.

While these investigations are being made the company is investigating the general financial and moral responsibility of the man. This is true even though the cattle themselves are given as security for the loan. A factor of as great importance as integrity

and wealth is ability. It is an essential attribute of the borrower in every good loan. The most reliable sources of outside information which the loan company has in investigating the responsibility of the man are other banks. In addition, wherever it is possible the loan company investigates the general credit standing of the borrower through the various commercial agencies and through special sources.

The most reliable and capable sources are the inspectors of the cattle-loan company. These men are often stockholders in the company. In all cases they have a deep interest in the welfare of the company, and usually they are men who have been connected with all phases of cattle growing and financing. Inspectors are sent to interview a man personally before any decision is made with regard to the granting of a loan. They take note of the impression of honesty and moral responsibility the borrower gives. They note the general appearance of the place, as shown by the condition of the improvements, the fences, the soil, and the growing crops. They observe the air of thriftiness and industry, or the lack of it, that prevails about the place. They notice the general condition of the live stock on the farm and judge from it the ability of the prospective borrower as a feeder. They make sure that he has adequate facilities to care for the watering and sheltering of the added stock. They examine carefully the amount of feed which he has on hand. In general the representations made in the financial statement are verified. Finally, in all cases where it is possible the inspectors examine the cattle which the prospective borrower intends to buy with the funds to be advanced by the cattle-loan company. They note particularly their quality and condition and judge whether the price to be paid is in excess of their value. They secure the brands on these cattle and check them with the reports received from the county clerk. If the cattle are purchased in a market center instead of in the state or community where the borrower resides, then the inspection takes place there simultaneously with the purchase.

The more conservative cattle-loan companies refuse to make loans to a cattle grower who has money borrowed from other firms with other cattle of the same brand given as security. A multitude of complications may arise from these "split loans," as they are called.

In the event that the investigations of the prospective borrower made by the loan company through all the available channels, including the report of the special field man, reveal that the man is a favorable risk, consent is given to the application. The borrower may already have cattle and may wish to use the money to purchase others to augment his herd. In that case he gives a chattel mortgage on the cattle then in his possession, as well as on the ones to be purchased. If the loan company thinks that the applicant has asked for money to buy more cattle than he can handle adequately, however, it will reduce the amount of the prospective loan. It may be that the borrower has no cattle at the time and can give only the ones to be purchased as security. If he has asked for a larger loan than is warranted by the class of cattle which he offers as security, the amount again is diminished.

The interest rate which is charged, as we noted previously, varies with the class of cattle offered as security, with the conditions surrounding the loan, and with the general conditions of the money market. Since the personality of the borrower is such a large and vital force affecting the interest rate, no definite rules concerning this can be formulated. The loan company has in its concepts certain men, however, either real or imaginary, to whom they will make a loan on a certain class of cattle at a given rate, under normal conditions of the money market, with certain other conditions which they regard as ideal. Variations from these will necessitate a different rate of interest.

As soon as the amount and the rate of interest have been determined the funds necessary to the purchase of the cattle are advanced to the borrower. This may be done in a variety of ways. The Chicago Cattle Loan Company has a method that is efficient and at the same time properly safeguards the company. It advances the money by means of a "draft with a bill of sale attached." On one side of this is a draft drawn on the loan company payable to the borrower on condition that the bill of sale on the reverse side of the form is properly filled out. In this bill of sale the seller of the cattle guarantees that he has good title to them, and he surrenders this to the buyer, who is also the borrower. He further agrees that all mortgages then existing on the cattle will be

released before he can demand payment of the draft. The cattle to be sold are described in detail, and the pre-existing mortgages are listed. As a subsequent part of this same form the buyer assigns all his rights and title in the cattle to the Chicago Cattle Loan Company. The two parts are subscribed to by the signers before witnesses.

If the cattle are purchased in the market center where the loan company is located the final inspection is a simple matter and takes place simultaneously with the purchase. As is often the case, however, the cattle are purchased elsewhere by the borrower. In this event an inspector is sent to the farm of the buyer. When the cattle are delivered he inspects them to make certain that they are the same cattle that he inspected previously.

The borrower then signs either one promissory note for the entire amount of the loan, or several notes aggregating the total loan. These are also signed by a second party. In addition, a chattel mortgage on the cattle applicable to the particular state is filled out and acknowledged by the borrower as grantor and the loan company as grantee. As a general rule the contents of mortgages applying to the various states do not differ materially, but the manner of acknowledgment and filing is often different. The grantee always has absolute control over the cattle and prohibits the grantor from moving them from his premises or otherwise making any transactions affecting them without first securing its consent. Since the mortgage, to be legally effective, must conform in every respect to the requirements of the state, and since these requirements vary with the different states, it is important to ascertain carefully these essential conditions. After the mortgage is properly filled out and acknowledged it is filed with the county clerk. To safeguard itself further the company registers the mortgage, as it did the brands shown on the "brand sheet," with the cattle raisers' association of the state or district.

It is very essential that a mortgage upon the cattle be required of the borrower. In the first place, it is a proper safeguard to the final payment of the loan. Cattle are quickly movable, and the loan company is usually located at a considerable distance from the borrower. While the loan company makes a thorough investigation

and very rarely experiences difficulty with a borrower, there is always the bare possibility that a borrower will attempt to sell the cattle and abscond with the funds. Since the legal title, by virtue of the mortgage, vests in the loan company, any individual purchasing the cattle from the borrower is responsible to the lender for the proceeds. A mortgage, moreover, assures the final payment of stocker loans by giving the lender title to all the natural increase of the cattle of the borrower. In the second place, a chattel mortgage on cattle is a convenient instrument. Merchandise is usually located in the same town with the lender, and since it constitutes the stock of trade it cannot be given as security. In the case of cattle, however, intended to be kept during the life of the loan, it is no inconvenience to go through this legal safeguarding. In the third place, the mortgage provides an exact description of the security, and its registration with the county clerk and cattle raisers' association provides the machinery whereby the distant lender is able to trace the cattle if they are taken illegitimately from the premises of the borrower. Finally a mortgage is essential to effective control of the security by the cattle-loan company during the life of the loan. It gives the lender control over the feed and water of the borrower and absolute control of the cattle. If any emergency arises demanding the movement of the cattle, the loan company by virtue of the mortgage can move them immediately. Instantaneous action in this regard is often necessary to protect the company.

The cattle-loan company makes one or more inspections of the cattle between the time the loan is made and the time of its maturity. These are made usually by the same inspectors of the company that made the original investigations, the number of inspections depending almost entirely upon the borrower and the general conditions surrounding the loan. Even in the case of a new customer, if the conditions appear to be favorable, only one inspection may be necessary; while if the loan company is suspicious of the borrower and is dissatisfied with the general surroundings of the loan, several trips may be made to the farm to inspect the cattle. The district in which the borrower is located and the type of cattle loaned upon indirectly affect the number of investigations.

The essential point in all loans is for the cattle-loan company to keep sufficiently informed as to the condition of the security to know at all times that the loan is safe.

If the application for a loan comes through a local bank instead of directly to the loan company the procedure is practically the same. Although the bank has originally investigated the borrower and the conditions which surround the loan, and in addition indorses the promissory notes of the customer, in the majority of cases the loan company reinspects before it purchases the notes offered by the local bank.

2. *Certain exigencies that may arise before the maturity of the loan.*—There are a few possible exigencies that may arise before the loan matures. It may be that the borrower exhausts his supply of feed. In such a case, the loan company either supplies the necessary feed or markets the cattle. If it is a stocker loan and there is a shortage of grass, it may be possible to move the cattle to regions where grass is abundant. If it is a feeder loan and the cattle are in a marketable condition, it may be satisfactory to market them; if they are not, it may be better to supply the feed necessary to finish the fattening process. In any event the funds which are advanced are paid later out of the proceeds of the cattle. If a shortage of water develops, the cattle are moved to a supply when this is possible; otherwise, the only feasible plan is to rush the cattle to market.

In rare instances the loan company may become suspicious of the actions of a borrower and will market the cattle at the first favorable opportunity. It is also barely possible that a continuously falling market may indicate such disastrous results that the marketing of the cattle is the only way to prevent further losses. These examples, as we shall indicate later, are seldom encountered. There are also isolated cases where the borrowers fraudulently attempt to market the cattle given as security. This, however, is practically impossible. In the first place, the field men of the cattle-loan company are always alert for such actions. In addition there are representatives of the various cattle raisers' associations in every market in the country. Since the mortgage and the brands are registered with these associations, if cattle arrive in the market

bearing the brand which has been registered by the loan company, the representative of the cattle raisers' association notifies the company of this fact and notifies the commission firm to which they have been consigned to hold the proceeds for the cattle-loan company. If the cattle are not consigned but are sold outright, the buyer is always responsible to the loan company for the proceeds, and the borrower is liable to criminal prosecution.

There is little possibility that disease will cause any large losses in a herd. The death-rate among cattle from this cause averages from 3 to 5 per cent. The foot-and-mouth contagion causes losses of less than 3 per cent. In addition, the government pays the usual market price for animals condemned with this disease and for animals condemned with tuberculosis.

3. *Elements of strength in cattle paper.*—"As cattle sell, the loans they carry are automatically liquidated, thereby rendering such loans, in our opinion, the best investment in the world for a truly commercial bank." Bankers and investors everywhere are beginning to realize the truth of this statement. They are beginning to see that a good cattle loan outranks even the best commercial paper, because it has many elements of security that the latter does not possess.

The most essential element of cattle paper, and probably its strongest security, is its extremely liquid quality. Cattle loans are never made for a longer time than six months. Feeder loans by their very nature liquidate themselves at the end of the period by the sale of the security. There is a continuous cash market for cattle, and market centers are located near practically every community in the United States. There is a daily cash market not only for finished beef but for every class of cattle. Thus, if the necessity arises any kind of cattle can be marketed at any time. Stocker cattle are usually not intended to be marketed until they have attained their growth, but the fact that an established cash market exists at all times makes such loans almost as liquid as feeder loans. Moreover, section 13 of the Federal Reserve Act provides that loans based upon cattle as collateral, "and having a maturity not exceeding six months," are eligible for rediscount with the Federal Reserve banks by any member bank. This makes it

possible for a cattle-loan company to discount its paper on hand with the Federal Reserve bank if the allied bank is a member of the system. This also relieves the banker from dependence upon the markets. If for any reason he needs funds quickly he can liquidate at an instant's notice the cattle paper which he has on hand. Thus cattle paper is one of the best secondary reserves which a commercial bank can possess.

A second point of security for cattle paper is due to the fact that it is based upon a life-necessity. "Panics may come and go, prices on the stock exchange may fall with a crash, the market may be suspended and security values decline until the margins are exhausted and the principal is lost, but as long as people can obtain food they will eat, and a goodly portion of their rations will be meat, and just as the demand comes fresh every day, so there is a market every day for cattle of every description, old or young, fat or lean." The fact that the lender has legal control of the security back of the loan is an additional advantage for cattle paper. In this manner the loan company is privileged to take all of the safeguards necessary to protect the loan. Cattle paper is also strongly indorsed. In the beginning the borrower and a second party sign the promissory note. If the loan is made through a local bank, the bank places its indorsement on the note. The cattle-loan company then indorses it before it reaches the final purchaser. While the last indorsement is the only essential one from the standpoint of the final purchaser of the paper, yet the fact that all four of the indorsements are substantial and can be depended upon certainly lends prestige to the paper.

The excellent organization of the cattle industry at the present time largely removes the element of chance from cattle loans. The introduction of good business methods, winter feeding, fenced ranges, pure-bred stock, and constant supervision has transformed the business of raising cattle from a haphazard industry to one that is considered extremely safe.

There is another strong vantage-point for cattle paper in the narrow range of fluctuations in the prices of cattle over short periods of time. Some examples chosen at random clearly illustrate this point. During the first six months of 1914 there was a maximum

fluctuation in the average price of stockers and feeders of eighty cents per hundred pounds. In 1915 the average monthly prices for native steers weighing from 1,200 to 1,500 pounds fluctuated for the first six months of the year from \$7.85 to \$8.95 per hundred pounds. The range of average prices for February, March, and April, however, amounted to only five cents per hundred pounds. In 1916 the weekly average from July to December for all classes of cattle varied only \$1.30 per hundred. The extreme variations between any two weeks was fifty cents per hundred pounds, while between eleven of the twenty-seven weeks the fluctuation was not over fifteen cents. Many other similar cases could be found, but these show that large fluctuations rarely take place rapidly.

Even in years of financial panics cattle markets are little affected. The range of prices in 1907 increased in practically the same proportion over the prices of 1906 as the 1906 prices increased over those of 1905. In 1908 there was another similar advance in the range. "The packers who were purchasers of beef in the banker's panic of 1907 were embarrassed for a week or ten days only." "In the early weeks of the present war, when the securities and cotton markets were closed and the grain markets greatly hampered, all of the live-stock markets of the country were open, continuing their business on a normal basis, and at prices equal to or higher than during the months preceding." Since cattle markets and cattle prices are little affected by panics, it is logical that cattle paper itself is little affected by them. A prominent lawyer who adjusted many business failures between 1887 and 1903 says that there were smaller losses on cattle paper than on any other class of paper. J. F. Ebersole, writing on this subject, says that "holders of cattle paper have never suffered in times of financial panic from failure to pay at maturity." A representative of the firm of John Clay & Company states that in 1914, when loans based on stocks and bonds had to be continued, 96 per cent of the cattle loans of that company were paid at maturity. The fact that cattle paper has successfully weathered all of the recent financial storms is a recommendation that is hard to duplicate.

Finally there could be no more potent recommendation for the safety of cattle paper than its past infallibility in normal times. There is a large list of companies that have experienced practically no losses on loans on cattle over a long period of years. The losses of John Clay & Company, of Chicago, have been merely nominal for over ten years. The Knorpp Cattle Loan Company, of Kansas City, has not had a single loan become past due since it began business a few years ago. In three and one-half years the Portland Cattle Loan Company has lent twenty million dollars with losses of less than six hundred dollars. The St. Louis Cattle Loan Company has lost amounts aggregating only 0.00025 per cent of the total loans. Losses of the St. Joseph Cattle Loan Company covering operations of eighteen years on loans aggregating seventy million dollars have amounted to only 0.00043 per cent. This list might be continued indefinitely, but the examples of these prominent companies serve to indicate that cattle loans for the past decade and a half have been extraordinarily safe. It is only logical that paper possessed of the elements of security which we have named is rapidly becoming the most popular type of investment with banks and financiers throughout the entire country.

V. THE MARKETING OF CATTLE PAPER

Cattle loans are made in sizes varying from one or two thousand to five hundred thousand dollars. While cattle-loan companies make many small loans and indirectly finance many small borrowers by taking the surplus loans of the local banks, yet they are not primarily institutions for the small borrower, and the majority of loans in the range country will average between ten and twenty thousand dollars. There are a number of companies which make many loans of one hundred thousand dollars and more.

The cattle-loan companies keep a portion of the loans which are made. Several prominent companies always keep an amount of paper on hand at least equal to the amount of their combined capital and surplus. Apparently this plan is a safe and conservative one. It is the plan of the affiliated banks to absorb the surplus paper of the loan company at times when the smaller banks are not in the market.

The primary purpose of the cattle-loan companies is not to act as investors, however, but to serve as brokers between the investors and the cattle growers. Their methods of disposing of paper correspond in some respects to those used by mortgage-loan companies and commercial-paper houses. Unlike the commercial-paper houses the cattle-loan companies indorse the paper which they sell and take a chattel mortgage upon the security of the loan. They advance the funds to the borrower at once. The largest purchasers are probably the large eastern capitalists and eastern banks. Large commercial banks everywhere, however, are turning to cattle paper as a means of investing their surplus funds. This is especially true in the Middle West and Northwest. The large institutions, moreover, are not the only purchasers of cattle paper. In certain seasons of the year, when the farmers' capital accumulates in the banks, the small country banks invest much of their surplus in cattle paper, which they secure from cattle-loan companies. When they need their funds again the paper is probably liquidating itself by the expiration of the period of the loan. In addition to these investors cattle-loan companies sell much of their paper to the general investing public and to capitalists and financiers everywhere. In fact, any person or institution with funds that could be invested in commercial paper is a possible purchaser of cattle paper.

It is apparently the custom to sell cattle paper to investors at a rate of interest about 2 per cent less than is charged the borrower. The 2 per cent covers overhead expenses, reserve for losses, and the loan companies' profits. The large eastern banks often purchase complete loans, that is, if a loan company has notes aggregating fifty thousand dollars from a single borrower, these may all be taken by one large investor. In this case, if he so desires, a duplicate certified chattel mortgage is made out and sent along with the borrower's statement and the notes. The loans are usually, however, divided into notes of one-, five-, or ten-thousand-dollar denominations. This is to facilitate sales to small investors who do not wish to purchase amounts equal to the entire loan, and to accommodate purchasers who wish to scatter their investments among several borrowers. To eliminate the expense and labor of issuing a

duplicate certified chattel mortgage to every small purchaser of a part of a large loan, one prominent company gives the small investor what is known as a "certified trust receipt of chattel mortgage."

The purchaser of cattle paper looks to the loan company for the payment of the loan. Since the majority of companies indorse all the paper they sell, they pay the note promptly at maturity and assume themselves the responsibility of prompt payment by the borrower. There is occasionally a borrower who gets from the sale of the cattle an insufficient amount of funds to pay the entire loan. In this case he will probably pay the deficit voluntarily. In the event that he does not, the loan company must proceed legally to seize any other property which may be included in the mortgage. As a last resort, if it is necessary, the cattle-loan company may institute legal proceedings against the borrower and force the payment of the loan from his general assets. This extreme procedure, however, is rarely necessary.

Even though many investors investigate the financial and moral standing of the original borrower, they are not in a position to make a thorough analysis of the conditions surrounding the loan. Since this is the case, the purchaser of cattle paper really depends for his safety upon the stability of the company making the loan. Naturally at a time when cattle-loan companies have been multiplying rapidly, some are almost certain to be weak. Since in the event of failure an incorporated company is liable only for an amount equal to its capital, the methods of investigation, inspection, and supervision are more important than either the capital or the amount of the outstanding loans. The territory in which the major part of the company's loans are made should therefore be determined. On the basis of this knowledge it can then be decided whether adequate investigations are made, whether sufficient margins are required, whether subsequent inspections are sufficient, and whether due safeguards are taken to protect the loan. The amount of loans which an organization should have outstanding at any time depends as much upon the methods of the company as upon its capital and surplus. Some authorities claim that a conservative company using every precaution and

safeguard may lend safely from ten to twenty times the amount of its capital and surplus. Many of the best and largest companies however, feel that their loans should not greatly exceed ten times their capital and surplus. In actual practice the outstanding loans are probably never less than this amount, and in many instances reach from thirteen to fifteen times the total of the capital and surplus. There are undoubtedly some companies lending a much higher ratio than this.

The investor should also investigate the character of the institution which is allied with the loan company. An organization allied with a strong bank is certain to have a strong support in times of trouble. The integrity and ability of the men connected with the company is an even more important consideration. A company which has been operating successfully over a long period of years is always stronger than a new and untried organization.

VI. THE CORRELATION OF CATTLE-LOAN COMPANIES AND ALLIED BANKS

The national live-stock banks with affiliated cattle-loan companies have many advantages not possessed by other institutions. The loan companies themselves, moreover, are placed in a much stronger position than companies operating independently.

The chief motive prompting these banks to establish cattle-loan companies arises from their inability to make to any one person loans larger than 10 per cent of their capital and surplus. This limitation sometimes means the foregoing of very desirable business. Thus by establishing a loan company in the same building the bank equips itself with an organization that can care for those loans that are above its legal limit. Since the same men who are subscribers to the capital stock of the loan company are holders of the stock of the bank, the revenue which accrues to the loaning organization eventually finds its way into the hands of the supporters of the banking institution. It is indeed true that if the money which is used to capitalize the cattle-loan company were placed as added capital in the bank, the amount which could be lent to any one person would be raised accordingly. In the case of a bank with \$600,000 of capital and surplus and a loaning limit

of \$60,000, the addition of \$150,000 to the capital stock of the bank raises the limit only to \$75,000. If this amount is placed in a cattle-loan company, loans can be made without any limit in amount. In practice single loans of \$500,000 are sometimes made.¹ These loans are placed, moreover, at a very small cost. The officers are usually connected with the bank, and the headquarters are in the same building. There is also a very small additional office force, so that the added overhead expense comes chiefly from legal expenses, taxes, and the cost of inspection. This is only a small percentage of the profit which is made.

The second advantage is that a loan company keeps no reserves. The majority provide a certain percentage as a part of operating expenses to cover the few losses, but no reserves are required by law and none are necessary, as there are no depositors to protect. A bank, on the other hand, is required to keep an amount of readily available cash equal to from 10 to 15 per cent of the deposits of the bank. This limits the amount of loans it can make.

In the third place, the limited liability of the stockholders of a cattle-loan company may be an influence with some of the organizers. Since the majority of companies are incorporated, the stockholders of these are liable only for an amount equal to the capital stock. In a national bank, however, the stockholders are doubly liable for the amount of the capital stock. This is probably not a compelling reason for the majority of organizers, but it cannot, nevertheless, be overlooked.

Fourthly, there are certain seasons of the year in which the bank does not desire a great amount of cattle paper, because at that time there is a heavy demand for funds by the local customers. In other seasons of the year it may have a large accumulated surplus of funds to invest. It is a considerable advantage to have an affiliated cattle-loan company as a convenient source to which it can turn for cattle paper as an investment.

One of the chief benefits to a cattle-loan company allied with a strong live-stock bank is the added prestige given the company. The public always assumes that the loan company is as strong as the institution with which it is connected. This is undoubtedly

¹ In practice this does not appear to have endangered the safety of the institution.

true. There has been no crisis by which we can test the assumption, but it is certain that a failure of the allied loan company would attach a stigma to the bank as well as to the stockholders and directors. Since this would be undesirable both from a business and from a social viewpoint, the men and the institution, both usually of excellent repute, will certainly give any aid to the company which may be necessary.

In the second place, the cattle-loan company has the use of the credit machinery which has already been developed by the bank. At times when the loan company has lent what it considers a safe amount on the basis of its capital and surplus it may be able to turn many small loans to the bank and thus accommodate its customers. It has also, in the affiliated bank and especially in the bank's correspondents, a place where it can turn much of its surplus paper in dull times.

VII. THE ECONOMIC SERVICES OF CATTLE-LOAN COMPANIES

There are several economic services performed by cattle-loan companies that make them invaluable to the nation. The increased production of beef animals brought about by rendering capital available to the grower is one of the largest and most beneficial results of the operations of these companies. They began to multiply and improve at a time when production was far below the demands of consumption. This improvement made capital available to the industry at a time when the strain on the local banks was so severe that had it not been for these loan companies production must have materially decreased. On account of this service there is undoubtedly a lower price to the consumer than would otherwise have been the case.

There is a corresponding service rendered to the cattlemen. The operations of the loan companies have tended strongly to steady the price of live beef. This has been done by checking overexpansion in times of high prices and by stimulating production in times of low prices. In 1912 prices were high, and expansion to two or three times normal was imminent. The cattle-loan companies curbed this and prevented larger losses, although much was lost on the glutted market of 1913. Thus the loan companies

direct the industry to a steady expansion that can be absorbed naturally and seek to avoid periods of undue and sudden expansion, which often lead to abnormal receipts on the markets and to a heavy drop in prices to the producer.

The cattle-loan company serves both the producer of cattle and the consumer of beef by increasing the supply of available raw foodstuffs. It is impossible for any system of agriculture to succeed which does not include stock growing, for "no method of preserving soil fertility has been found that can take the place of manure." The basis of all increased production in crops must be increased fertility of the soil and improved methods of farming. Thus, since increased production of cattle means necessarily increased fertility of the soil, it directly provides larger crops of raw foodstuffs for human consumption. The increase in the yield per acre repays the farmer many times for the loss per unit of production due to the increase in supply. The increase in the available supply, on the other hand, lowers the price which the consumer must pay.

Finally the cattle-loan company renders an economic service to society by a better distribution of capital. There has been a constant tendency to concentrate capital in the industrial establishments of the nation at the expense of the producer of raw foodstuffs. This defect has been largely remedied by the activities of the cattle-loan companies. In making capital available to cattle growers the loan companies help to prevent a concentration of capital entirely in the East. Much of the money which would otherwise drift back to New York when the crop-moving season is over in the fall is turned by the loan companies into the production of finished cattle. This improvement in the distribution of capital has lowered the average rate of interest to cattlemen. The average rate charged by commission companies during the "bonanza period" of the cattle industry was 10 per cent. The strain on the local banks, moreover, was so great following this period that there was little decrease in the rates. The advent of the modern cattle-loan companies with their improved methods has had the effect of lowering the average interest rate at least 2 per cent. This saving is at least a benefit to the grower and augments his ultimate

profit. It is, in addition, a saving to the ultimate consumer, unless a monopoly somewhere intervenes to prevent the working of normal competitive forces.

VIII. THE FUTURE OF CATTLE-LOAN COMPANIES

The story of the cattle industry in the past reads like a myth to those of the present generation; the future will not fail to add its marvels. John Clay, the foremost authority on the cattle industry in America, once said: "I firmly believe that the live-stock industry is just in its infancy in this western country, and that live-stock loans will be made as long as the cattle industry exists." As long as the consumption of beef continues to be heavy and the price of beef continues to be high, there will be an increasing need for a satisfactory and mobile loan system.

The consumption of beef and beef products will probably not decrease in the immediate future. As long as the war continues, consumption is certain to be sustained at its present rate. At the close of the war the present European soldiers will again be turned into industries, but they will have to be fed, and most of the beef must be imported. This will be in addition to the call for breeding stock by the European nations.

This, however, is only a small amount in comparison to the natural demands of our own country. As long as we have wealthy people we shall have a demand for high-class beef. As long as we have industrial workers we shall have a demand for the cheaper classes of beef. While there are those who hold that a workingman can receive the proper nourishment on a diet composed entirely of vegetables, the majority of people believe that some meat is preferable in a worker's diet. The average laborer, moreover, is a firm believer in the necessity of meat as a part of his rations, and beef is his usual choice.

It seems certain that prices cannot materially decline in view of the present supply of cattle. If the number of available beef cattle increases, then the present demand may be met at a lower price. The importance of Argentine as a factor in increasing the beef supply of the United States is steadily growing less. The beef produced there, moreover, is inferior in quality and can never

take the place of corn-fed American beef. In the United States, even with the added stimulus given to the production of beef in the South, the break-up of the vast western ranges makes the increasing of the supply of beef cattle a slow process.

The requisites of a satisfactory financial institution to supply the capital essential to cattle production are most nearly found in present cattle-loan companies. It seems very clear that the Federal Farm Loan banks will not have any appreciable effect upon the cattle-loan company. The system was not intended to accommodate short-time borrowers. This act undoubtedly renders a valuable organization available to the purchaser of real estate, but it is too unwieldy and inappropriate to be of value to the cattle grower. In the first place, he may not wish a continuous loan for five years. He is often unable to give a first mortgage upon his land to secure the loan. He can usually not afford to depend upon the decisions of nine other men, nor can he afford to undergo the laborious process of investigation and appraisal which is necessary. In addition, the limit of ten thousand dollars to a single borrower places the same objection upon the Federal Farm Loan banks that the cattle-loan company was first designed to meet.

Since it has become a well-known fact to the initiated that cattle-loan companies are very profitable, it is probable that the number of these organizations will continue to increase. The natural competition between these companies will probably "weed out" those whose methods are not absolutely sound. It is probable that, although competition may drive the interest rates down, enough additional loans will be made to compensate the loss. One prominent writer says: "The four or five million dollars placed in loans yearly by the average loan company, as at present constituted, is but a fraction of the loans that may be placed by them in a few years." These companies have made notable advances in the past, and there are vast opportunities ahead.

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NOTES

WASHINGTON NOTES

THE WAR REVENUE BILL

On September 3 the Ways and Means Committee reported, and on September 20 the House of Representatives passed, the so-called War Revenue Bill (H.R. 12,863, Sixty-fifth Congress, Second Session), which has been under consideration in committee for practically three months past. So complex is the measure and so lengthy its detailed provisions that only a very general summary of its effect can be furnished. In general the proposed law amounts practically to a doubling of the existing volume of internal taxation, but in many classes of the revenue now collected it will triple or quadruple the burden previously imposed. Structurally the bill is comparatively simple, providing as it does for (1) taxes on income; (2) taxes on excess profits and war profits; (3) taxes on commodities, such as beverages, automobiles, etc.; and (4) stamp and other excise taxes on various instruments, documents, etc. Basically the new normal income tax rate is fixed at 12 per cent instead of 4 per cent, with the surtaxes as in the past beginning after \$5,000 and being to all intents and purposes doubled. The highest ranges of surtaxes are of course not materially altered, but they were already so high as to permit of but little advance. Exemptions remain as heretofore, while below \$4,000 a reduction from the normal rate of 12 per cent to 6 per cent is provided. Whereas, therefore, the man with an income of \$5,000 will pay a normal tax of 12 per cent on \$1,000 of his revenue, he will pay only 6 per cent on the taxable sum below that figure. The highest ranges of income (above \$5,000,000 annually) will now be taxed at practically 77 per cent, including both normal and supertax. Probably the greatest controversy has been produced by the so-called war-profits or excess-profits taxes. On these, two alternative methods of levy have now been proposed, the so-called war-profits plan calling for a rate of 80 per cent on all above a specified normal or minimum profit exemption of about 10 per cent. Beverage taxes have been enormously raised, while the duties on a long list of commodities classed as "luxuries" will inevitably add very greatly to the prices of many articles. There seems to be little reason to doubt that the new bill will produce the revenue it is intended to raise, provided that its operation does not result in curtail-

ing the income-producing power of the nation by cutting off the saving margin so largely as to cripple industrial enterprise. On this point considerable difference of opinion is already manifest, the prevailing view of the business community being undoubtedly that the effect of the bill in the direction referred to will involve very considerable danger. On the other hand, the imposition of the new income taxes at the proposed rate admittedly has an exceedingly important bearing upon the success to be expected in the placing of government loans. These loans are now being raised primarily through sales of bonds to the recipients of moderate incomes, who in a very large number of cases have subscribed as liberally as they could. In those instances where individuals are putting practically their whole savings into the purchase of Liberty bonds the new income taxes must necessarily operate to reduce the bond-buying power of the individual. Assuming that such instances are sufficiently numerous, their effect will tend to be that of reducing the power to distribute the Liberty bonds as widely as formerly, unless the purchases heretofore made by men of moderate income are practically taken over by the recipients of the higher classes of wages and by the so-called working class in general. The distribution of the bonds among this element in the community has not thus far been very successful, and it remains to be seen whether a field for the sale of the securities can be developed there. The estimated yield of the new bill may be taken as somewhere between eight and nine billions of dollars, or from two to two and one-half times the yield of present internal taxation.

MORE BOND LEGISLATION

The measure recommended by Secretary of the Treasury McAdoo on September 10 and passed by the Senate on September 18 in a form substantially identical with that in which it had previously passed the House is to be regarded as the complement to the war-revenue measure and will in future be studied in conjunction with it as embodying the complete statement of Treasury policy for the year 1918-19. This bill provides for two fundamentally important provisions: the exemption of the new bonds from taxation up to a specified amount and the establishment of the power of the Treasury Department to control foreign exchange through the acquirement of banking credits abroad as well as in other ways. The provision of the bill bearing upon the exemption of bonds from taxation, although highly complex in language, is simple in its conception. It provides for the exemption from taxation of a specified amount of Liberty bonds of the various loans so long as they are in

the hands of any one holder. The aggregate of Liberty bonds which could thus be exempted from taxation, so far as income is concerned, would apparently be \$75,000. The exempt holdings are, however, to be distributed among the several successive issues, and a substantial percentage of them must have been obtained through original subscription to the fourth Liberty Loan. Thus there is held up to the prospective subscriber the prospect of exemption for a considerable amount of income, so far at least as the taxes to be levied during the war are concerned—for it is expressly provided by the Secretary of the Treasury that at the close of the war, when the surtaxes upon income are supposedly to be reduced, the exemption from taxation shall cease. Inasmuch as the bonds are already free of all normal income tax, the exemption from surtaxes during the continuance of the war practically means that an individual may be safe in the enjoyment of about 4 to $4\frac{1}{2}$ per cent upon his money during the war, provided he is willing to put it into Liberty bonds. This course has been selected by the Secretary of the Treasury in lieu of the plan which has been urged by not a few students of the Treasury situation—that there should be an advance in the rate of interest on bonds that would carry it up to the commercial level; or else that Congress should be asked to permit the selling of bonds below par, as is the practice in foreign countries, so that the government would be paying the going rate for such advances as it may secure. The present administration of the Treasury Department has been opposed to either of these expedients, although the rate on government bonds has been advanced from $3\frac{1}{2}$ to $4\frac{1}{2}$ per cent, the Secretary's view being that every effort should be made to avoid further increases because they involve great expense to the government. The exemption from taxation brings about practically the same situation, so far as the bondholder is concerned, but the case is quite different when the relation of the interest rate on government bonds to the commercial rate of interest is considered. It is an unquestionable fact that our market rates have been held to artificially low levels, as is shown by the experience of foreign countries as well as by analytical study of our own problems. So long as the rate of interest on government bonds stands at a certain figure, it is almost out of the question to attempt to raise the commercial rate on prime paper much above that figure. To do so would be to facilitate the downward movement of the bonds in the market, and consequently the effort has been generally made to hold commercial rates at a practical parity with those paid by government securities. The proposed exemption of the bonds from taxation is the

second change of policy since the beginning of the war, the first issue of bonds having been wholly tax-exempt, while the second and third issues were given only a very limited exemption. The new plan is a compromise between the two former policies.

GOVERNMENT CONTROL OF RAILWAYS

The first formal report of the operation of railroads under government control has been furnished to the President by the Director General of Railroads in a formal document filed under date of September 3. This report reviews the experience of the railroad administration from the taking over of the roads some seven months ago up to the present time and summarizes the various changes of policy that have been effected. A portion of the report is given to the statement of analysis of economies that have been effected in the salaries of the personnel. In general the policy adopted with regard to this phase of management has been a material reduction for the higher-paid officials and an increase for the lower grades of employees, intermediate salaried officers remaining practically unchanged. Advances in wages granted since the government took over the roads have aggregated probably \$400,000,000 per annum, while the savings effected in salaries have of course been very much smaller. Other savings that have been introduced are seen in the consolidation of ticket offices, the cessation of advertising, the suspension of various methods of competition, and other similar expedients. The advance in freight rates by about 25 per cent and the parallel advance in passenger rates, both of which were put into effect last June, are naturally defended on the ground that they have been necessitated by the constant increase in the cost of doing business, as well as by the increase in direct wage payments. It is shown that conditions surrounding the movement of freight are very much better now than at the time when the transfer of control occurred. The congestion which was then characteristic has been terminated, and although many classes of freight are still held up or are moving slowly, it is on account of the priority granted to war munitions and is designed to insure their prompt movement to the ports of shipment.

Financial relations between the railroads and the government are explained at length but have not yet been brought to a settled basis, owing to the fact that security holders continue dissatisfied with the form of contract proposed by the railroad administration to govern the use of the funds received from operation. There is little in the report to make a definite showing in favor of government control as a

permanent policy, for, while it is true that many economies have been introduced and some sources of waste eliminated, it would seem from the facts and figures in the case that government operation is certainly much more costly and probably much less convenient for the public than was the old régime. This conclusion itself is by no means final, because of the obvious fact that the taking over of the roads was a war measure and as such to be regarded as temporary in its effects and intended to meet a temporary condition. The situation has in fact been so abnormal during the months of government control of railways that no reasonable conclusion either way could be properly based upon the experience during that period. Time has not yet been afforded for any showing of the effect of the increased rates upon the earnings of the roads, for the enlarged receipts during the first few months of operation were absorbed almost immediately in the payment of back wages under the award made by the board which investigated the wage situation and acted upon by the Secretary of the Treasury. The most recent reports of earnings show a gratifying increase. The fact still remains that in raising rates the government took a step which has been strongly urged by the railroads, and that, had they been given the larger income which they then asked, they would have been able to supply correspondingly better facilities—perhaps in a degree that would have rendered it unnecessary or undesirable to attempt a system of public operation.

BOOK REVIEWS AND NOTICES

Regulation of Railways. Including a Discussion of Government Ownership and Government Control. By S. O. DUNN.
New York: D. Appleton & Co., 1918. Pp. x+354. \$1.75.

The appearance of *Regulation of Railways* by the editor of the *Railway Age* is timely, first, because it is not probable that the railroad eggs will be completely unscrambled after the war; second, because there is a danger that past unsatisfactory experience with government regulation, and what is hoped will be successful management under government operation, will appear to many to be sufficient reasons why we should have government ownership of railroads. Therefore a careful study of the problem sometime before we are ready to act is highly desirable. Such a study has been made by Dunn in his third important work on transportation.

In this valuable contribution to the subject of transportation the author has presented what is on the whole a well-balanced and clear-cut discussion of problems which will present themselves for solution with the return of peace. To the student familiar with transportation there will appear some repetition throughout the chapters, due possibly to the fact that much of the material brought together in this volume had been published previously in magazine articles. (In one case, page 245, there is reference to material in an earlier chapter, that does not appear until the following chapter.) But from the standpoint of the general reader for whom this book is probably intended the repetition in it is a distinct merit.

In his first book, *The American Transportation Question*, published about six years ago, the author did not discuss government ownership at all. His second volume, published in 1914, was devoted entirely to that subject. The present volume is characterized not so much by new material as by an up-to-date interpretation of much that the author has said before in his earlier volumes and more recently in periodicals. In chapters ii to x inclusive of the present volume he discusses the following topics: the trouble with railway regulation, the functions of government in relation to railways, commission vs. legislative regulation, federal vs. state regulation, regulation of rates, valuation in relation to regulation of

rates and securities, regulation of securities, regulation of railway operation, and the peaceable settlement of labor disputes. In these chapters the author has attempted to show the strength and weakness of regulation as it existed before the railroads were taken over by the government. In examining this subject historically he finds we had the first effective regulation beginning with the Hepburn Act in 1906. He believes that this and succeeding legislation have done much good; that among other things it has eliminated the domination of the railways over politics, abolished free passes and rebating, greatly reduced unfair discriminations, and made financial manipulation more difficult through better accounting of the railways to the government. But it is shown that not all the effects of this regulation have been good: that while the Interstate Commerce Commission has power to suspend rates and prevent advances it has no power to advance rates or prevent reductions; that this results in the granting of many unduly low and unfairly discriminating rates; that with the Commission having power to make maximum rates, both section 5 of the Act to Regulate Commerce and the Sherman law have done more harm than good, since through combinations railroads could not have made rates high but could have effected many economies in operation and rendered more efficient service.

The author contends that regulation of railway rates is still based upon the theory which came to the fore in the period from 1893 to 1906. He points out that before the panic of 1893 there was rapid expansion of railway facilities, really much ahead of needs; that with the boom in traffic about 1898 there was no need for large investments to handle the business; that about this time the tendency of railway rates was upward; that between 1898 and 1906 extensive labor-saving devices were introduced, advances in wages were small and taxing authorities had only begun to discover the possibilities of railroad properties; that as a result of these conditions the seven or eight years preceding 1906 showed "strikingly increased returns," when "large and juicy melons were cut" (p. 28); that the events of this period gave rise to the belief that there are practically no limits to the law of increasing returns, and the public, anxious to share in the prosperity of the railroads, began a policy in the Hepburn law, and in various state rate laws, which reduced rates and imposed heavy financial burdens upon the carriers, thus restricting railway profits to such an extent that the railways have had insufficient funds with which to expand railway mileage and furnish adequate railway service.

Granting that the inadequate service of the railways in recent years has been due in part to a rate regulation which has assumed no limits to the law of increasing returns, it may be pointed out that although limitation of rates did not begin until 1906 with the passage of the Hepburn law, in that very year we suffered much from an inadequacy of transportation facilities. The evidence taken by the Interstate Commerce Commission at important centers throughout the country in 1906 and that given before certain congressional committees at that time indicates that our transportation system was not equal to its tasks before the government had inaugurated its policy of rate restriction. The trouble at that time was more than a mere shortage of cars, and, it may be added, this was a time of peace. Those who believe that rate restriction has not been the sole cause of inadequate railway facilities since 1906 may wish to know why the railroads should have been unequal to demands made upon them at the end of a period of seven or eight years of strikingly increasing returns when they were able to cut many juicy melons. James J. Hill told the Interstate Commerce Commission in the Minneapolis hearings of 1906 that the growth of commerce in the country was against a stone wall so high that it was not possible to see the top of it. He pointed out that from 1895 to 1905 "the tons moved increased 110 per cent," while the increase in mileage was but 20 per cent, and he maintained that it was as impossible to bore an inch hole with a half-inch auger as it was to drive the business then being offered to the railroads through the facilities which they had.¹ Howard Elliott told the Commission in the same hearings that water would back up and run very slowly through a hose if there was not room for it to go out at the end; that, he maintained, was largely the condition of traffic on the Northern Pacific at that time.²

While it is true that conditions in 1906 were unusual with regard to the increase in traffic and the scarcity of both labor and materials, it may be true that some of the difficulty was due to the fact that part of what was paid out in dividends by the railroads during the period ending in 1906 should have gone into railway facilities. Daniel Williard, who at that time was vice-president of the Burlington system, frankly stated to the Interstate Commerce Commission in the Chicago hearings of 1906 that he had not properly anticipated the increase in business which his road had been called upon to move.³ Furthermore, it is conceivable that our

¹ Senate Document No. 333, Fifty-ninth Congress, Second Session, pp. 295, 296, 298.

² *Ibid.*, p. 282.

³ *Ibid.*, pp. 396-97.

transportation difficulties in 1906 and to some extent more recently have been due to a lack of the proper co-ordination and use of railway facilities as well as to their supply. Many students of the transportation question believe with the author that it would be desirable to repeal the anti-pooling section of the Act to Regulate Commerce and the Sherman law. But the question might be raised whether he has claimed too much for what the repeal of these laws would accomplish. With reference to President Wilson's statement that the railroad managers of the country had done all that it was possible for them to do under the circumstances, the author observes that all the "circumstances" referred to by the President "were due to government regulation of one kind or another" (p. 13). Again, in discussing the taking over of the railroads by the government, he contends (p. 197) that it "was made necessary—if it was necessary—by restrictive regulatory laws which government control could set aside." It is conceivable that the inability of railroad managers to operate their private systems to produce the maximum transportation efficiency has not been due entirely to the antipooling legislation and the Sherman law. There are very many agreements which railroads might have made with each other, e.g., trackage rights and more common use of terminal and other facilities, that are in no sense prohibited by the legislation referred to. As Professor Van Metre has recently observed, railroad men do not necessarily deserve censure because they have not come forward and offered to share strategic facilities with their competitors, but it ought not be urged that they have not done so merely because of restrictive legislation. Railroad men like other business men are ready to compromise, and enter into agreements when there is likely to be more gain by doing so than by not doing so, but when they enjoy strategic or monopoly advantages which cannot be taken away from them by the policies followed by other carriers they do not feel the need of such co-operation. While it is true, as the author emphasizes, that railroad regulation ought never to attempt to supplant railway management, it may be desirable to require railroads to do what they will not do voluntarily even if the antipooling legislation and the Sherman law are repealed. The decision of the Supreme Court in the St. Louis terminal case in 1912 would indicate a beginning in the right direction.

Proper regulation of railway operation, which is discussed in chapter ix, involves at least a threefold relationship, the relation between the railroads and regulating authorities, the relation between the railroads and the shippers, and the relation of the railroads to each other. The

first of these is much emphasized by the author. He points out that regulation by the states is responsible for inferior and inadequate service and much unfair discrimination through legislation and commission rulings that conflict with each other and with the federal government. The author has not exaggerated this situation. Indeed, he has not given the "shipper legislatures" and shippers generally their just dues, so far as their responsibility for the inadequacy and inefficiency of transportation facilities are concerned. The United States Department of Agriculture has considered it necessary from time to time to publish literature informing agricultural interests how they have contributed to the inefficiency and insufficiency of transportation facilities. But in view of evidence which was taken by the Interstate Commerce Commission in 1906 and again in 1916 in the Louisville hearings, it would appear that it will be necessary to give more attention to the relation of the railroads to each other. For example, the public has a vital interest in the violation of car-service rules and the resulting unequal distribution of railway equipment among railway systems, among different classes of shippers, and among different sections of the country. The unequal geographical distribution of equipment has played no small part in bringing about much of the state legislation of which the author very properly complains.

In his earlier volumes, in his able editorials, and in the present study, the author has consistently contended for a program of regulation which will reward and hence encourage efficiency in railway management. It is because he fears that efficiency will not be encouraged that he is opposed to government ownership; on the same theory he has opposed, in recent editorials, an extreme degree of standardization of railway equipment by the United States Railroad Administration. In his discussion of valuation (chap. vii) as related to rates, however, it is claimed that the best basis for rate regulation is that of present or reproduction cost. Despite many court decisions on valuation it may be said that while this theory is desirable from the standpoint of private-property rights in public utilities, it is not clear that it will mean, especially in the future, the close connection between efficient management and its remuneration, which the author considers vital. A valuation of the property of a public utility when prices are low might mean a reduction of rates without any deterioration in service or any less efficiency in management. Or a valuation during high prices might mean an advance in rates not accompanied by an improvement in service or greater efficiency in management. On this theory a gas plant

located in a city before it had paved streets might ask for an increase in rates when the streets were paved merely because it would cost more to reproduce the plant, on account of the expense which would be involved in tearing up the pavement and relaying it to put in the gas pipes. When the question came in this bald form to the Supreme Court in the Des Moines Gas case (June, 1915, 238 U.S. 153), it was held that such an addition to valuation is not warranted. The very fact that the different theories of valuation persist indicates how difficult it is to find any one theory that is satisfactory. But it would appear that some plan must be worked out which in time will separate transportation efficiency and reward for good service from fortuitous changes. It is probable that in time even the courts will indorse such a theory of valuation. The time may come when the government will need to take over the rights of way and terminal lands of carriers in order to separate increment from investment and thus make a closer connection between transportation efficiency and its reward. If this is done there would be less difficulty in applying the proposed theory of valuation to railroads.

Chapters xi to xv inclusive treat of government ownership, and the results of this policy in Canada are very carefully examined. The author concludes that democratic countries are more likely to succeed with private ownership and government regulation than with government ownership. Evidence is presented to show that strikes of railway laborers could occur under government ownership as well as under private control, unless legislation is passed to prevent them, and this it is maintained can be done under private ownership as well as under government ownership. The proposed plan of strike prevention is similar to the Canadian law and would prevent strikes only until there could be an investigation of the issues and the public informed concerning them.

The author's constructive proposals are sane and progressive. In the closing chapter a plan is presented which is intended to preserve the merits of private ownership and government regulation and avoid the disadvantages of government ownership; in the proposals for regional federal commissions to supplant state commissions, for federal incorporation of railroads and federal supervision of security issues, the author is supported by a large and increasing number of students of transportation.

C. O. RUGGLES

OHIO STATE UNIVERSITY

History of the United States—Political—Industrial—Social. By CHARLES MANFRED THOMPSON. New York: Benj. H. Sanborn & Company, 1917.

The method of approach used by the author of this volume is an excellent evidence of the increasing realization that to study one phase of social growth isolated from others is to study nothing. It appears as a pleasant relief to that type of American history which is primarily concerned with the analysis of military campaigns and the interpretation of the Federal Constitution. The author declares that "in the selection of material and in the method of presenting this material" he has been animated by a desire "to place more emphasis on the industrial and social activities of the American people than is usually placed by writers of textbooks which we may for convenience call political histories." It appears to the reviewer that Professor Thompson has succeeded very happily in carrying out this purpose. The prominent economic, social, and military facts in the evolution of the American people are well enough blended to indicate their intimate relationship, even to the student to whom such a view is novel.

There is a suggestion of a method in the text which one might wish had been carried farther and made more emphatic and obvious. This is the representation of specific facts as the details of great social movements and their accompanying social attitudes. Part I, for example, is headed the "Adaptation of English Industry and Government to American Conditions." Here is indeed a fertile point of view from which to survey American history. One has, upon noting it, a keen sense that it is the evolution of a social group that is to be studied. Something of this sense is lost in the headings of Parts II and III, "Industrial and Political Adjustment" and "Industrial Expansion and Consolidation." One wishes that the author had done more with the captions to suggest the continuance of the adaptation process which it will be quite possible to indicate to the student from the text material itself.

Teachers should find this book usable. Its general point of view, pleasant, readable style, profusion of interesting illustrations, and general mechanics will recommend it to everyone. Those teachers who do not see the intimate relation between the economic and the political, or who do not believe it desirable to teach these phases of growth at the same time, will not find it of great aid. Neither will the volume find its greatest favor with those teachers who wish to make American history an intensive study of certain periods rather than

a survey. Those teachers, however, who regard history as the record of a genetic process in which numerous blended elements act upon environment and one another, and are in turn reacted upon in a constantly evolving complex, will welcome this as a very serviceable book.

LEVERETT S. LYON

UNIVERSITY OF CHICAGO

Credit of the Nations. A Study of the European War. By J. LAURENCE LAUGHLIN. New York: Scribner, 1918. Pp. xii+406. \$3.50.

In this book Professor Laughlin has given an exposition and an explanation of the operation of the credit systems of England, France, Germany, and the United States during the first three years of the present war. On account of the lack of adequate reliable data he does not include in his account Russia, Austria-Hungary, Italy, and the other belligerent nations.

Chapter i, entitled "The Economic Situation Preceding the War," presents a brief sketch of recent economic history, especially with reference to its bearing upon the causes of the war. Chapter ii, entitled "War and Credit," discusses the foundations and machinery of credit, its relation to money and capital, and especially its relation to war. One chapter each is devoted to England, France, Germany, and the United States, and the method of treatment is substantially the same in each case. First the credit system and machinery of the country is described; then follows in order a discussion of credit conditions before the war, the shock occasioned by the outbreak of the war and the means and measures employed in solving the problems that arose, the adjustment to war conditions, and the course of credit and financial events to the middle of 1917. Special attention is given in each case to the effects of the war on industry and commerce, prices, foreign exchange, inflation, public debts, and taxation. In four appendixes are published in full the chief public documents involved and a number of other interesting data, including the registry of foreign-built ships and a list of our loans to the Allies. A number of excellent charts are inserted in appropriate places throughout the book.

Professor Laughlin devotes considerable attention to "a comparison of the ways by which German, French, British, and American systems of credit have met the unparalleled shocks of this unprecedented war," and concludes "that British credit has shown itself superior," chiefly for

the reason that it "has avoided the dangerous expansion connected with advances to the state in France and Germany." He also concludes that the habit in France and Germany of using bank notes instead of checking accounts has been a source of weakness and a cause of currency inflation.

Professor Laughlin looks with disfavor upon the moratoria measures employed in England, France, and Germany at the outbreak of the war, and thinks that in most, if not in all, cases they could have been avoided by a proper use of available banking machinery. He also criticizes the English government for the authorization of the issue of the one pound and ten shilling legal tender notes, believing that instead such issues should have been permitted to the Bank of England.

Regarding Germany he reaches the interesting conclusion that she "is not now solvent, and that unheard-of burdens must be carried even into the distant future. Taxing little and borrowing much, she has risked all on a single throw of the dice, on a military decision. She is even now fighting not merely for the *status quo ante* but for commercial gains, for expansion, if not for indemnities which will retrieve her financial losses. Indeed, her industrial classes were as much responsible for the war as her militarists; so that the weakening of her credit is likely to induce these industrial classes to work mightily for peace. The end is to be looked for more through their influence than through a revolt of the masses" (p. vii).

Throughout Professor Laughlin emphasizes the fundamentals in the situation; namely, production and saving. He shows that no kind of financial legerdemain can be a substitute for these essentials. In the enormous productive power of the warring nations and the large margin of production over necessary consumption he finds the explanation of the financial achievements, which before the war most people would have considered impossible, and the ability to bear the tremendous financial burdens of the future.

Economists who still cling to the quantity theory of prices will find occasion to criticize many of Professor Laughlin's interpretations, and there is wide room for differences of opinion regarding many of the topics treated, but all will welcome this timely and illuminating exposition of one of the most complicated and, to the average man, confusing aspects of the war.

W. A. SCOTT

UNIVERSITY OF WISCONSIN

War Administration of the Railways in the United States and Great Britain. By FRANK H. DIXON and JULIUS H. PARMELEE.
New York: Oxford University Press, 1918. Pp. xii+155.

This monograph is one of the preliminary economic studies of the war prepared under the auspices of the Carnegie Endowment for International Peace. It presents a simple but well-told narrative of the administration of the railways in the United States and Great Britain during the war, the narrative being carried down to the early part of December, 1917.

The experience of the United States is set forth in Part I. The authors review briefly the part played by the railroads and their relation to the government during the earlier wars in which this country has been engaged; sketch the organization of the Special Committee on National Defense of the American Railway Association (popularly known as the Railroad's War Board); describe the earnest efforts of the Board to realize added operating efficiency as a means of meeting the unusual demands arising out of the war; and recount the satisfactory manner in which the railways co-operated with the government. Part I closes with the report of the Interstate Commerce Commission to Congress early in December, recommending unified operation of the railways, either by the carriers or by the government. With the publication of this report it became clear that the period of voluntary co-operation was drawing to an end; that the first chapter in the war administration of the railways was being concluded. The failure of voluntary co-operation the authors attribute in part to the inefficiency of private operation, but also in considerable measure to restrictive legislation (the Sherman Act and the antipooling section of the Interstate Commerce Act), the decentralized condition of government authority, the obstructions interposed by state regulating bodies, the unprecedented amount of traffic offered, the excessive preference orders of the various departments of the government, the selfishness of certain groups of shippers, and to some degree the refusal of certain railroads to comply with the orders of the Railroad's War Board. In the face of these handicaps the record of the railways as shown in the statistical results of freight operation is held to be extraordinary.

Extraordinary though the record may be, the fact remains that the railways did not measure up to the needs of the hour. Early in the war the higher railroad officials had pointed out that they welcomed the opportunity to demonstrate to the country the value in time of war of "railroads with elastic management," yet it only took nine months for a

convincing demonstration to be made of the fact that the policy of "elastic management" was a failure from the standpoint of securing "a maximum of national transportation efficiency."

The administration of the railways in Great Britain is presented in Part II. The authors describe the taking over of the railroads of England, Scotland, and Wales on August 5, 1914, less than twenty-four hours after the formal declaration of war (the railways of Ireland were not taken over until January 1, 1917); the organization of the Railway Executive Committee to which the operation of the roads as a unit was intrusted (the Executive Committee is composed of the chief executives of the leading lines, with the president of the Board of Trade as the nominal chairman); the financial arrangements whereby the owners of the railroad properties were guaranteed a net income equal to that of 1913 (the best year the railways had ever known), thus making it possible for the resources of the railroads to be thrown into a common pool without regard to the effect of this action on the revenues of individual roads; the labor situation; the remarkable record of efficiency of the railways and the far-reaching economies that had to be inaugurated because of the marked shortage of labor. This whole account of British experience is of decided value in that it encourages us to believe that the United States is at last on the right track, and in that it points to the sacrifices that the public must ungrudgingly make in order that the railways of the country may be set free, so far as possible, for the prosecution of the task to which the country is definitely committed.

ELIOT JONES

LELAND STANFORD JUNIOR UNIVERSITY

The Larger Liberalism. By EDWARD BERNARD BENJAMIN. Printed for the author's private circulation. Cambridge: University Press, 1918. 8vo, pp. vi+199.

The Larger Liberalism is an example of the attempted use of a trip hammer to crack a nut. Roughly, it resolves itself into four parts. The first presents an indictment of industrial society and a statement of "remedial orders" in a summary which is alike free from dogma and analysis. The second offers a series of pencil sketches of the life and thought of industrial workers which masquerade as literature. The third furnishes a criticism of schemes of reform which indicates no careful scrutiny of the proposals condemned. The fourth brings the cosmic discussions of the volume to a head in a defense of price-fixing and the eight-hour day. We are told that "reform will come bit by bit, in little chunks, chiseled by time from society's own adamant heart." The author

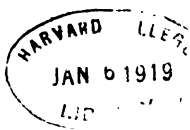
shares the confusion common to Mr. Carver's students that institutions are merely external manifestations of an immutable human nature. He therefore concludes that "we are all of us what we are," and recognizes no possibility of change in social arrangements except by the approved economic method of the addition of infinitesimal increments.

Japan at First Hand. By JOSEPH I. C. CLARKE. New York: Dodd, Mead & Co., 1918. 8vo, pp. xxxvi+482. \$2.50 net.

This volume records the unprejudiced impressions of one who traveled through Japan three or four years ago, interviewed various men prominent in business or politics, saw the usual sights, artistic and social, and followed the usual routes of travel. The general character of the book can be inferred from these facts. It does not pretend to be the result of long and intensive study, or to give the impressions of one trained in the keen analysis of social institutions. The author is sympathetic in his attitude toward the Japanese and finds no fundamental reason for antagonism between that country and this.

The topics covered are broad in scope—art, religion, sports, education, newspapers, theaters, farmers, silk culture, special sights, and so forth, ending with a trip through Korea and Manchuria to Peking. One chapter each is devoted to "Big Business" and "Finance and Banking," with some discussion of the more obvious phases of modern economic development and the effects of the war. But such information on these topics as the economist or business man wants is best found elsewhere.

The book contains no serious study of the persistence in Japan of the mediaeval organization of society, or of the reaction of modern industry upon the old.



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Commercial Banking and Capital Formation. IV
H. G. Moulton 849

Compulsory Arbitration in Great Britain during the War
Milton Moses 882

Notes 901

Certificates of Indebtedness in Our War Financing *Jacob H. Hollander* 901

Washington Notes: 909

New Financial Needs—A Subsidy to Gold—Amendments to the Federal Reserve Act—Changes in Bank Investment

Book Reviews and Notices 914

AGGER's Organized Banking (G. W. Dowrie), 914.—CLARK, HAMILTON, AND MOULTON's *Readings in the Economics of War* (James D. Magee), 916.—GRAY's *War Time Control of Industry. The Experience of England* (J. M. Clark), 918.

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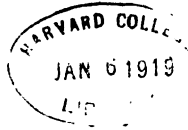
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COMMERCIAL BANKING AND CAPITAL FORMATION IV

I. INTRODUCTION

The discussion of banking operations in the preceding articles of this series¹ no doubt appeared somewhat remote from the subject of capital formation—meaning by capital formation the creation of material instruments of production as distinguished from liquid funds in the form of bank circulating media. The foregoing detailed analysis of the connection between commercial banking and the investment market was deemed necessary, however, as a foundation for a study of the relation of bank credit instruments to the process of capital formation under conditions imposed by a specialized and pecuniarily organized society. The present paper will therefore attempt to indicate the connection between the expansion of loanable funds that has resulted from the organization of our banking machinery and the creation of capital goods.

It has already been indicated² that capital formation as treated in economic literature has been generally regarded as a very simple phenomenon. To insure an adequate provision for the future all that is considered necessary is for the individual members of society to exercise the honest, if homely, virtue of thrift—to *save by*

¹ See *Journal of Political Economy*, XXVI (May, June, July, 1918).

² *Ibid.* (May, 1918).

foregoing consumptive satisfactions. Two factors appear to have conspired to divert attention away from the processes by which, in our modern pecuniary society, individual savings of monetary income are transformed into capital equipment: First, the dominance in economic literature of the theory of value and distribution has required (*a*) explanation, if not justification, of interest on capital as one of the distributive shares, and (*b*) elaborate analysis of the psychology of saving.¹ Second, the resolution of material instruments into pecuniary values has tended to camouflage the processes by which pecuniary savings eventuate into capital equipment. It is recognized that this latter statement means little as it stands. It is presented at this place merely as a challenge and as an explanation for preceding a discussion of the relation of commercial banking to capital formation by a discussion of capital formation itself.

Before considering the rôle of commercial banking in capital formation this paper will discuss (*a*) the process of capital formation under primitive or pioneer conditions, (*b*) the changes in the process that resulted from the development of specialization and exchange, and (*c*) the complications that are introduced by the necessity, under modern conditions, of effecting the formation of capital through the pecuniary mechanism.

¹ This is not the place to enlarge upon the foregoing statement. I think it will be readily agreed, however, that neither the classical economists nor the productivity and discount theorists were concerned, when writing on interest and saving, with the processes by which the transmutation of individual savings into capital goods is effected under modern industrial conditions. The analysis of and emphasis upon interest by the classicists was largely a result of the attacks leveled against this distributive share by the socialist school. To explain or justify interest it was necessary to show that the creation of capital involved a sacrifice or cost which was as much entitled to a reward as labor and which if unrewarded would not be undergone. While perhaps not so directly motivated by polemical requirements the discount theorists have maintained much the same point of view. Their analysis is mainly elaboration and refinement of the cruder conceptions of abstinence and sacrifice. The productivity theories are also designed to explain interest; but they do not explain capital formation. And both the agio and productivity schools take for granted the institutional system through which these savings are wrought into capital equipment. As a result of this situation economic literature contains no adequate theory of capital formation. It is only in the literature of crises that the problem is even definitely considered. Let me hasten to add that this paper does not supply the great deficiency. It is intended merely as a tentative analysis of certain neglected phases of the problem.

II. CAPITAL FORMATION UNDER PRIMITIVE CONDITIONS

If we are to understand the process of capital formation we must look to the factors which determine the apportionment of productive energy between the creation of consumption goods and the creation of capital goods. The old illustration of the primitive fisherman who forewent consumption and tightened his belt in order that he might have time available for the fashioning of a net with which to enlarge his productive power in the future does not quite reach the crux of the problem, because its animus is to emphasize the sacrifice involved in postponing consumption. Now a fortunate catch by the fisherman, so large that it was impossible to consume it all in a single day, thus freeing time for the making of a net, is of course quite as plausible an explanation of the origin of capital. What needs to be emphasized for our present purpose is that if an individual is to increase his productive power by the use of capital he must, under primitive conditions where exchange does not exist, devote a portion of his time to the creation of capital goods—he cannot devote it exclusively to the creation of consumption goods.

Under the conditions of pioneer life in America capital goods were largely created by this direct apportionment of energy between the creation of consumptive and capital goods. The pioneer farmer as a matter of routine devoted those portions of the year during which it was impossible for him to plant, cultivate, or harvest his crops to the digging of ditches, the clearing and improving of land, the construction of farm buildings, the creation of public roads, etc. Since the farming classes made up the greater portion of our population until after the Civil War, it is safe to say that the larger portion of the capital equipment of America came in those days as a result of an individual process of utilizing in the creation of capital goods portions of the year which could not in the nature of things be utilized in the production of consumers' goods.¹

¹ It goes without saying that in some parts of the country this situation still obtains. It goes without saying, also, that it is only under the most primitive conditions that pecuniary investment plays no part in making provision for the future, and that there has been a steadily increasing proportion of farm savings that take the form of pecuniary investments.

It should be added here that so long as land was abundant and improvements scanty there was little check to the profitable creation of capital goods. A home with possession of fertile land adapted to the production of the necessities of life was at once a means to the gratification of consumptive and social desires and a guaranty against want in old age.

It may be of interest to note in passing that capital formation under these conditions was not primarily a result of abstinence, or time preference, or impatience. Such capital formation was accompanied by little or no diminution in immediate consumption. Save in exceptional instances, the days of the year which were utilized in the creation of capital goods could not have been utilized in the creation of consumers' goods. The alternative to capital formation was thus not larger consumption but idleness.¹ To the extent that foregoing leisure may be regarded as sacrifice of pleasure there was of course a form of abstinence here involved. But it is questionable if more than the merest fraction of this foregoing of leisure can be regarded as involving sacrifice. To the "old man" who led the way and "bossed" the job the work involved in improving the farm, etc., was "pure joy of creation." To the offspring capital formation was no doubt often irksome; some leisure was greatly desired. But it may be reflected here, also, that with the limited opportunities for diversion which the conditions of pioneer life afforded, work was the chief form of recreation. Certainly the building of public roads by the community in off seasons can under no circumstances be regarded as involving abstinence or sacrifice, for it afforded one of the few opportunities for intimate association with one's neighbors and for acquiring on the part of each the community accumulation of sundry gossip and "enlightening" stories.² But whether or not one agrees that these savings were largely controlled by other factors than abstinence or sacrifice in the sense that the economist has used these terms, it is clear that the process of creating capital goods was the direct one of individual apportionment of productive energy between the

¹ To be sure, one could always hunt or fish.

² If "impatience" was involved, it was impatience to be through with the harvesting of consumptive goods and to undertake the creation of new public highways.

creation of consumptive and capital goods. It is of note, also, that this creation of capital goods was directed and accomplished by individuals who were also producers of consumers' goods; that it was not dependent upon the successful working of a complex industrial and pecuniary social organization; and, finally, that the capital goods created were largely owned and used directly by those who created them.

III. CAPITAL FORMATION IN A SPECIALIZED SOCIETY

a) *The changed nature of the process.*—Capital formation under conditions of specialized production and exchange is very different from what it is under a simpler organization of society. The change in the nature of the process may be briefly indicated. Mr. Jones produces goods for Mr. Smith's consumption. Smith in turn produces goods for Jones's consumption. Now if Jones curtails his consumption in obedience to a thrifty impulse or a desire to secure a competency for old age, he curtails the demand for Smith's goods and thus reduces Smith's production. And if Smith has a similar urge to save, he in turn reduces the production required of Jones. It is obvious that under such circumstances saving would not lead to the creation of additional productive equipment; on the contrary it would result in only part-time use of existing capital equipment and lead to many hours of leisure on the part of Jones and Smith as producers.¹ And if Jones and Smith are divorced from land, neither has any opportunity to employ his leisure hours in direct creation of capital goods as a provision for old age.

While it is easy to see the interdependency of large consumption and new capital formation in this simple illustration of isolated individuals, such relationship is usually overlooked in the complicated specialization and exchange which characterizes our present-day industrial society; and it is generally assumed that individual retrenchment in consumption is the royal road to new capital formation.² The confusion arises from isolating the individual. If I am

¹ On the other hand, if each increases his consumption there will be an incentive for each in his productive capacity to strive to increase his productive equipment in order to meet the increased consumptive demand.

² Section IV discusses the influence that is exerted in this connection owing to the fact that savings are now effected in pecuniary form.

thrifty while everybody else consumes as usual, there is certain to be an effective demand for the products of the capital goods which are created as a result of my saving, and hence provision for my old age is assured. But if everybody rigidly economizes, the situation is entirely different. Universal thrift is a fallacy. We can have the requisite demand for the creation of new capital goods only so long as consumption is steadily expanding.

We have argued here that large consumption is necessary to induce large production and the creation of additional capital goods; and it would appear to follow from this that the increase of capital equipment would be most rapid when there is a large consumptive demand and hence large production of consumers' goods. But since capital formation involves the utilization of a portion of our limited supply of productive energy, it may be asked: Does not any increase in the production of consumptive goods necessarily decrease the energy available for the production of capital goods and thereby retard the rate of new capital formation? It appears like a mathematical impossibility.

Two supposititious cases may be taken for the purpose of illustrating the possibility of a more rapid increase of capital when consumption is high than when it is low. First, suppose that as a result of large consumption 75 per cent of our energy were devoted each year to the production of consumers' goods, 15 per cent to the replacement of existing capital goods, and 10 per cent to the creation of new capital goods. Now suppose that because consumption is kept low only 60 per cent of our productive energy is devoted to the creation of consumers' goods, 15 per cent to the replacement of existing capital goods, and 5 per cent to the production of new capital goods. Under these circumstances it would take twice as long to double the existing supply of capital goods as in the former case. The validity of this illustration obviously depends upon the validity of the assumption that only 80 per cent of the available energy of society is employed in the second case.¹ If the analysis that has been made above of the relationship between consumptive demand and the formation of additional capital is sound this assumption is a valid one. The

¹ Of course the percentages here used are mere guesses.

balance of our available energy, i.e., 20 per cent, will not be devoted to the creation of new capital, because, by hypothesis, the demand for the products of capital goods has decreased. It is believed, moreover, that there is evidence to substantiate this conclusion.¹ But before submitting this evidence, it will prove of interest to present a tentative statement of the more significant results of the situation which we have been portraying.

b) *Some results.*—In the first place, where a retrenchment of consumption takes place with a view to saving, there is not only a retarded rate of capital formation, but, as we have seen, there is a smaller total expenditure of energy by society—80 per cent instead of 100, in terms of the foregoing illustration. If this meant an eight-hour instead of a ten-hour day for everyone the resulting leisure might be a welcome compensation. But in fact it usually means full employment for the fortunate, stark unemployment for many, and part-time work for others. It is certain to mean more or less privation for those unfortunately placed in the industrial system; and among the masses it means sheer inability to make adequate provision for old age.²

In the second place, where the capitalist and the laborer are one and where opportunities for direct utilization of one's own time in the creation of capital goods exist, it is entirely within one's own volition whether he shall or shall not create capital goods and make provision for a higher standard of living in the future, as well as insure against want in his declining years. Under conditions, however, where capitalist and laborer are separate persons, where production is specialized and exchange necessary, the wage-earner is largely debarred from utilizing "off hours" or periods of unemployment in direct capital formation. Because he usually has no land or home where he can employ his spare time, idleness is wished upon him, whether he will or not. A similar situation is true of the salaried classes of the cities. Occupancy of an apartment, or even of a yardless house, closes the door to any direct employment of one's spare hours in the creation of capital goods

¹ See p. 859.

² This is of course only one of many causes of unemployment; but it is a fundamental factor that has never been fully appreciated.

that will make for security in old age and at the same time promote economic welfare at large.

In the third place, under conditions where one cannot make provision for his future through the direct process of producing capital goods he is placed at the mercy of the market.¹ That is to say, the provision for the future that is made by a wage-earner or salaried man is not dependent upon whether he spends his "off hours" in work or in idleness; nor is it merely contingent upon whether he refrains from unnecessary consumption. It depends upon industrial conditions in general; for the effectiveness with which individual savings are transformed into capital goods is contingent upon a myriad of forces in a complex social and industrial world. Similarly, the capitalist proprietor or the corporation which creates new "capital" through the process of putting back into the business each year a portion of the earnings is also dependent for the profitableness of this new capital upon the market demand for the product and hence upon industrial conditions in general. While the position of the modern capitalist has less of uncertainty than that of the wage-earner and salaried man, he is not the independent arbiter of his fate in the matter of capital formation, as was the individual enterpriser upon the land under primitive conditions. He is subject to the control of business and trade conditions at large; and the rate of his capital accumulation must wait upon expanding consumption.

c) *Is consumption a controlling factor?*—We may now turn to a consideration of the evidence that consumption is in fact a controlling factor in connection with capital formation in a specialized society. An explanation is perhaps necessary for devoting space to a point which should be more or less obvious. I have found, however, that there has been relatively little consideration in economic theory of the relationship of expanding consumption to capital formation, and from informal discussion I have learned that many economists are inclined to deny any very close connection and to assume that capital formation can proceed apace in a society that is practicing the most rigid economy in consumption.

¹ It is not to be understood from this phrase that the market is essentially merciless. There are, however, a multitude of factors at work under these conditions which lessen the certainty that postponed consumption will ripen into security for old age.

We may consider first two main reservations to the doctrine that consumption is a controlling factor. The first of these arises from a consideration of the demand for intermediate products. It is urged that the demand for one sort of capital goods constitutes the demand for another kind of capital goods and that such intermediate demand serves quite as effectively as does the demand for consumptive goods to stimulate business activity. This is measurably true of course. At certain periods a rapid increase in capital formation is undoubtedly aided by such demands for intermediate products. But this is at best only a temporary postponement of the check on capital accumulation; it does not eliminate the influence of consumption. It is probable, moreover, that the importance of this demand for intermediate products is greatly overestimated. It seems to be a general assumption that a relatively large portion of the productive energy of society goes each year to the creation of capital goods. It is believed, however, that a study in terms of labor power and material instruments would show so large a proportion of the productive energy of society devoted to the creation of goods for current consumption that consumptive demand would appear always to be the dominant factor in the situation.¹

In the second place, it is often assumed that society can devote its productive energies for considerable, if not indefinite, periods of time to the creation of new capital, merely with a view to an ultimate increase of consumption; that is to say, there appears to be no reason why society cannot adopt the individual method of saving for a rainy day or old age or for a higher standard of living in the future. Such a policy cannot be worked out, however, where the productive energy of society is apportioned by individual entrepreneurs with whom the motive force to capital formation is private gain. The entrepreneur who assumes the risks and directs the creation of new capital is in quest of profits, and profits from the enterprise can be obtained only from the sale of its products. And since profits will not be waited for indefinitely by those who assist in financing the enterprise it is usually relatively short-time-profit

¹ There has long been needed a study in concrete terms of the actual apportionment of energy between the creation of consumptive and capital goods. Such a study is now being made by Professor H. Gordon Hayes and will shortly appear in this series of articles on capital formation.

considerations that determine the formation of new capital. It is only in rare instances that private initiative will wait long for a return; and even in these cases the anticipation of a steadily developing demand is a *sine qua non* to new capital formation.

Closely related to our present discussion is the old question of overproduction. Taussig's analysis of this problem is perhaps as good as any. He argues that "saving and investment simply mean the employment of labor in a different way"; that the new plant and machinery will shortly be used in making new consumptive goods—goods which can be sold to the laboring classes if offered at a lowered price; and that "until the mass of mankind come to be in vastly more prosperous condition than has been dreamed of in all the utopias, an indefinitely extensible market can be found for goods adapted to their use" (*Principles of Economics*, chap. xli). While this "explodes the fallacy" that a diminution of "luxurious" expenditure will necessarily cause unemployment, it is to be noted that it supplants one kind of consumption with another. Taussig even recognizes that the new consumption by the laboring classes might not permit all the new product resulting from "relentless" saving to be sold "at a profit." In this event he points out that the difficulty is "not overproduction but over-accumulation and overinvestment," whereupon relief will come "quasi-automatically"; for, "as interest fell, more and more of the well-to-do would conclude they might as well spend as invest; would buy houses, pictures, champagne," etc.

It is of note that all this explicitly requires an expanding consumption and is thus in accord with the thesis outlined in this paper. The analysis does not, however, reach the heart of the problem of capital formation in modern industrial society. First, it assumes that the great mass of laborers does not and should not save and make provision for the future.¹ Second, it appears to assume, since it is implied that the process works well automatically, that society as a whole will somehow manage to save such

¹ This is certainly not a situation which should lead economists to pronounce the economic organization of society as on the whole one that promotes the economic well-being of mankind, and it is, of course, an effective estoppel to the argument that the way to economic salvation for the masses is by rigid sacrifice of the present for the future.

amounts as will in the long run direct the proper proportion of productive energy to the formation of new capital and meanwhile (save for temporary maladjustments) always provide full employment for labor—in a word, that there is no danger that the process may result, as was suggested above, in causing the industrial system to run at only 80 per cent speed. Finally, the analysis does not recognize the complications of the problem that inhere in the monetary medium through which savings are effected (see Section IV).

Now as to the evidence that consumption is in truth a directly controlling factor. It is necessary to state in advance that much of the evidence is inconclusive by itself. It is believed, however, that it is on the whole strong enough to throw the burden of proof upon those who hold opposing views. In the first place, then, the periods of the most rapid capital formation appear to have been periods of largest consumption. To mention only a few cases, everyone knows that the decade from 1897 to 1907 was one of tremendous extravagance in this country. It was at the same time, however, a period during which capital was created more rapidly than ever before in our history. On the other hand, the period from 1874 to 1879 was one of low consumption and of a very slow rate of capital formation.

It may or may not be significant in this connection that very thrifty nations like France and Holland have had a less rapid rate of capital formation than more extravagant nations like the United States and Germany.¹

But perhaps the experiences of the war are more instructive. There developed in 1915 an enormous European demand for the products of American industry. The result of this new market was a tremendous expansion of production. It was not a diversion of energy from one form of production to another; it was a net increase attributable directly to a net increase in consumptive demand. This increase in demand came not only from Europe; it came also from the laboring classes in this country who had been given steady employment and enlarged purchasing power as

¹ To Germany's private consumption must, of course, be added the public consumption in the form of war supplies.

a result of the European demand.¹ This enormous increase of demand not only increased the production in existing industrial establishments; it also led to the rapid creation of new capital. In terms of money savings the compilations of the Treasury Department show that in 1916 the savings from all sources were nearly three times those of a normal year; and that the corporate savings for 1916 were about equal to the entire corporate savings for the years 1910-14 inclusive.²

After our own entrance into the war the demand for war supplies was even more intense; it became, in fact, insatiable. Although many of us felt that the slack in the industrial system must have been pretty well taken up as a result of the European demands of 1915 and 1916, events proved the contrary. Monetary savings appear to be much larger in 1917 and 1918 than in 1916;³ and in spite of large withdrawals of men for military service total production appears to have been substantially increased.

Great Britain's war experience is even more illuminating. The inordinate demands for war supplies soon gave employment to everyone, including women and children. And the increased purchasing power that came to the masses of people in Great Britain resulted during the first year of the war in an actual increase in the output of goods for private consumption—this in addition to an enormous increase in the production of war supplies.⁴ And in 1916 the Garton Foundation estimated that although 1,500,000 workers had shifted from peace industry to munitions-making and other special war work in England, and several additional millions had been taken for the armies, England succeeded in feeding and clothing its people not appreciably worse than in times of peace, while manufacturing a sufficient surplus of goods to maintain a very considerable part of the export trade.⁵ The lessons of the war

¹ It should be borne in mind here that the increase in prices did not for a considerable period of time result in a decrease in real wages. While prices may possibly have increased more rapidly than wage rates, continuous employment served to make the annual real income of laborers, particularly of families, substantially larger than before.

² Unpublished data furnished by David Friday.

³ *Ibid.*

⁴ There is abundant evidence on this point.

⁵ Brougham Villiers, *Britain after the Peace*, p. 97.

in England appear to indicate that there must have been a large and constant, though fluctuating, slack in the industrial system in normal times; that a large portion of the unemployment that existed was of a more or less permanent kind, superinduced by the lagging demand for the output of expanding industry.

There is also abundant evidence of the relation of consumptive demand to capital formation in connection with the economic cycle. In periods of depression there is an enormous amount of unemployment and part-time work. In addition there is a general disposition to be economical. And it is not until there occurs an increase in consumptive demand that a revival from a serious business depression occurs. I am referring here to the major fluctuations of trade and industry. In the case of some of the minor fluctuations it is possible that no very direct connection can be shown between an increase in consumption and business recovery. But with the more serious depressions it is usually some fortuitous event which places in the hands of important classes increased consuming power that gives rise to a period of prosperity. It appears to be, moreover, a steadily increasing consumption that is mainly responsible for the continuance of prosperity and new capital formation for considerable periods of time.

The sources of this increased consumption are not always clearly understood. First, when once revival has started there is an increased consumptive demand arising from the fact that millions who have been working, say, two hundred days a year, now work three hundred days a year. Second, large numbers of workers who have been out of employment altogether are now given steady work. Third, women and children in increasing numbers are drawn into industry with a resulting increase in family wages. Fourth, there is extra pay for overtime work. Fifth, an increase of immigration annually adds substantial numbers to the labor force of the country.¹ These increased wages² are largely expended in the satisfaction of

¹ Since these immigrants receive higher wages than they had received in the lands from which they came, this means a net increase in the demand for the products of industry.

² Recall that it is an increase of real wages (see footnote, p. 860).

consumptive desires¹ and thus tend to keep up the demand for the output of new capital goods.

The foregoing illustrations all point to the relationship of expanding consumption to capital formation. What evidence is there now that a curtailment of or restraint on consumption causes a slackening of the rate of capital formation? A few suggestive illustrations must suffice.

Villiers tell us² that in England during the "hungry forties" whenever the prices of foodstuffs rose in consequence of bad harvests, virtually all the income of the English laboring classes went for food, with the result that manufacturing industry everywhere languished and unemployment became widespread. With the falling of food prices a demand again arose for manufactured goods, and employment became once more relatively plentiful.³ It goes without saying that under such conditions the rate of new capital formation could not be rapid. Where standards of living are high it is difficult to trace a direct connection between a decline in the rate of capital formation and a decline in consumers' demand. The slackening in the rate of industrial expansion might be ascribed to other factors.⁴ But where the masses are near the margin of subsistence, as in this English example, the connection appears to be very clearly established.⁵

¹ This matter of consumptive demand is of course not the only factor of importance in connection with the expansion of trade and industry in the upward swing of the business cycle. As Mitchell so well shows, the business cycle is an extremely complicated phenomenon: technological costs, bank reserves, interest rates, social reactions, etc., all play their part. But it is believed that an expanding consumption is a paramount requirement to business expansion and new-capital formation.

² In his very illuminating volume, *Britain after the Peace*.

³ Villiers states that it was this demonstrated dependency of manufacturing upon the demand of the masses for ordinary commodities that induced the manufacturing classes to support the repeal of the corn laws.

⁴ And it is certainly often due to other factors.

⁵ It seems to me not impossible that the fierce struggle for foreign markets that exists in all thrifty and rapidly growing industrial nations is evidence of restrained consumption or consumption that is not expanding as fast as productive capacity; the effective domestic demand is not sufficient to absorb at a profit all the produce of expanding industry. And it may be that the *total* demand is lagging rather than merely the demand for particular commodities where production has been unduly heavy. The special interests that are in search of foreign markets usually do not

In a period of business depression following a panic we have a good illustration of the effect of lessening consumption on production and hence on capital formation. In the words of Mitchell:

Consumers' demand declines in consequence of wholesale discharges of wage-earners, the gradual exhaustion of past savings, and the reduction of other classes of family incomes. With consumers' demand falls the business demand for raw materials, current supplies, and equipment used in making consumers' goods. . . . The contraction . . . is cumulative, since every reduction of employment causes a reduction of consumers' demand, and every decline in consumers' demand depresses current business demand and discourages investment, thereby causing further discharges of employes and reducing consumers' demand once more.¹

Another illustration is to be found in our war experience. Immediately after the outbreak of war the President and others urged the most rigid economizing on the part of the American people, and the result was a sharp retrenchment in consumption. Within a few weeks the result of this was manifest in declining sales and lessened production, together with a slackening of ordinary new-capital construction. There was then inaugurated the movement for business as usual² as a means of preventing unemployment and of insuring large profits. A retrenchment of consumption thus quickly made itself felt throughout the entire business world.

In conclusion, it is of interest to note that the manufacturing and trading classes have always understood that "times are good" when everybody is purchasing extensively in the markets. And

reason that exports must be paid for by imports and that hence foreign outlets will not be of real assistance; they regard foreign sales as net gain. This view of the struggle for world-markets is held by many writers on foreign trade—writers outside the ranks of the professional economists and hence unfettered by some of our economic pre-conceptions.

¹ *Business Cycles*, pp. 577-78. Mitchell tells us, however, that there is no evidence that continued expansion of business is eventually checked, as the socialists have argued, by a failure of consumption to expand (*ibid.*, p. 580). This certainly requires explanation (see p. 876).

² As soon as the demand for war supplies became effective the reduced demand of private consumers was of course more than counterbalanced by the increased public demand. Moreover, as in England, the rise of family, if not of individual (real), wages among the war workers served for a considerable time largely if not entirely to offset the fall in demand on the part of those who were led to economize, either voluntarily or involuntarily.

good times with them means not merely large consumption; it means also the ability to lay something by. But the economists, overlooking the obvious facts that periods of great extravagance have usually been periods of rapid capital formation and that periods of low consumption are generally accompanied by retarded accumulation, have usually insisted that there is a peculiar virtue in thrift.¹

Two factors appear to me to have influenced the reasoning of the economist in this connection. The first is the prevalent fear that there is never any prospect of oversaving; that, on the contrary, there is always the gravest danger that large consumption will divert so much of the energy of society to the creation of consumptive goods that not only will capital accumulation not be rapid, but worse—that the existing capital supply will be worn out without replacement. The economist thus aspires to be more than a pure scientist; he is also a preacher of the gospel of individual economic salvation. The chief difficulty here is that in preaching so ardently we have usually forgotten to be scientific.²

The second factor relates to the rôle that money plays in connection with the process of capital formation. It is believed that the institution of money has tended to obscure the underlying industrial factors which we have been considering in the foregoing analysis. Attention must therefore now be directed to capital formation as complicated by the pecuniary mechanism through which it is mainly effected under modern conditions.

IV. RELATION OF MONEY TO CAPITAL FORMATION

In the classical treatment of currency, where money is described as a medium for exchanging consumers' goods already on the market awaiting purchase, there is little intimation that it is related to the productive process; certainly there is little explicit statement that it is through the agency of money that the business manager organizes his business. But the plain facts of the case

¹ The economist has been ably assisted by the investment banker for reasons that are obvious.

² The present writer pleads guilty of repeated transgressions in this very connection.

are that in the modern world not only is a large proportion of all saving of that indirect sort which manifests itself in depositing a portion of one's pecuniary income in banks or in investing it in securities, but the business man who transforms these individual pecuniary savings into social capital employs money as the instrumentality for accomplishing this purpose. And where savings are made directly by corporate managers and business enterprisers by retaining in the business a portion of the net earnings the problem is largely the same, for the conversion of these earnings into capital goods is again wrought out through the financial mechanism.

It should be emphasized that under these conditions it remains true that if capital goods are formed, it can only be, as before, through the application to this purpose of a portion of the productive energy of society. The problem is the same as under primitive conditions; only the instrumentalities through which it is accomplished are changed. But where capital formation is effected through the pecuniary mechanism, economists have been prone to forget the underlying industrial factors in the situation and the apportionment of productive energy involved and to think largely in terms of finance. "Saving" means (see students' notes in any course in the elements of political economy) putting the monetary income in savings banks or investing it in securities, where, in addition to being returned in the future for one's uses, it yields interest the while. Unfortunately this analysis is usually not "followed through"; the funds thus saved have been left with the investment banking institutions with the assumption that they will automatically be employed in the creation of capital goods. It is believed that the explanation of this phenomenon may be understood in the light of the succeeding paragraph.

It has been hinted that the monetary mechanism complicates the process of capital formation. Let us see how. On the one hand, unless savings of individual pecuniary incomes are made, funds do not flow to the investment banking institutions; and if the investment banking institutions do not get possession of funds business men cannot obtain the liquid capital necessary to induce a portion of the productive energy of society to be devoted to the creation of capital goods. Under a pecuniarily organized society,

therefore, saving of monetary income is an indispensable prerequisite to the formation of capital. But, on the other hand, if individuals do save and place their money with investment institutions in order to provide the necessary funds for entrepreneurs who wish to induce laborers to create new capital goods, we find that the reduction in consumption necessary for the release of funds with which to divert energy to the creation of new capital goods tends to decrease the profits that may be derived from employment of the new capital; it must be recalled here that the business man who diverts energy to capital formation does so with the expectation of profit, and that the most fundamental determinant of profit is effective demand on the part of consumers. To the extent, therefore, that the saving of monetary funds involves a reduction in consumption there is a check to the effective utilization of the new capital which is to be created through these pecuniary savings. To create capital it is necessary to forego consumption; but to forego consumption is to render unprofitable the creation of the capital.

In the previous section of this paper we had appeared to argue that the way to insure rapid capital formation was to keep consumption large; we now find, however, that curtailment of consumption is, in fact, necessary in order to release the funds required to create capital. We are thus face to face with an extraordinary dilemma. The specialized production and exchange which characterize modern industry, coupled with the monetary mechanism by means of which the apportionment of energy between the creation of consumers' goods and the creation of capital goods is wrought, appear inevitably to retard the rate of capital formation—if not to create an *impasse*.

To retrogress for a moment, I fancy that it is because savings are effected in pecuniary terms that the economist has so commonly failed to appreciate the relationship of consumption to the creation of new capital. What has been seen is that if all pecuniary incomes are spent for consumptive goods business men desiring to create new capital will have no funds with which to enter the markets and secure the employment of the necessary labor power. It would

superficially seem to follow from this that the greater the proportion of current income diverted to investment institutions the greater will be the proportion of our national energy devoted to the creation of new capital. The resolution of industrial factors into financial terms thus appears to have obscured the vital relationship of consumption to capital formation and to have caused us to forget that under a specialized and profit-making industrial organization new capital will not long be created in the face of a lagging consumptive demand.¹

It is recognized that there is an air of unreality about the foregoing exposition of the relationship of pecuniary saving to the rate of capital formation; it appears to be too strong a statement and not in accord with the facts of recent generations. Capital formation has, in truth, been very rapid in recent times, particularly in the United States. Accordingly, unless there is an error somewhere in the preceding analysis, we must seek an explanation of the apparent anomaly.

In seeking an explanation it must be borne in mind, first, that the mere fact that capital formation has been rapid in modern times does not disprove the conclusions drawn from the foregoing analysis. It is to be expected that the rate of capital formation would increase as the efficiency of capitalistic industry increased. But the real question is, Has capital been accumulating as rapidly

¹ A few illustrations of the results of this on economic theory may prove of interest. J. Laurence Laughlin would have the laboring masses universally comfortable, in a few short generations, if they would only work hard, forego for the time all unnecessary consumption, and invest a portion of their incomes (see *Latter-Day Problems*, p. 83). Alvin Johnson urges that modern protection has tended to divert income from the masses (thereby keeping general consumption low) to the entrepreneur class, which automatically saves large portions of it, depositing it in banks, purchasing securities or, more often, putting it directly back into the protected business. This has "played a part in equipping modern society with the vast stock of capital goods which it now possesses" (see *Political Science Quarterly*, XXIII, 230). Walton H. Hamilton argues that the unequal distribution of wealth which has characterized the nineteenth century has been a potent factor in the rapid accumulation of capital, for it has prevented a rapid increase in consumption and permitted a rapid increase in saving (lecture delivered at the University of Chicago, July, 1917). Both Johnson and Hamilton implicitly assume that rapid capital formation without rapidly expanding consumption can continue for long periods of time because both were discussing the economic development of the nineteenth century.

as it might have accumulated in the absence of the limiting factors which we have been discussing?

In the second place, the monetary mechanism does not create an *impasse* as suggested elsewhere, for the reason that not everybody does save, and, as a result, there is not an entire check to consumptive demand. Some funds are constantly being diverted to the investment banks, and this permits some bidding for the productive energy of society for the purpose of creating new capital goods. But the acceptance of this explanation implies an acceptance of the corollary that, inasmuch as preliminary restriction of consumption is required, capital formation must proceed at a less rapid rate than might otherwise be the case. I believe that this is in general accord with the facts of modern times, particularly under conditions such as have prevailed in England in recent generations with a highly specialized pecuniary order and a fully developed credit system.¹

Further explanation of the anomaly is that the expansion of bank currency that has come with the gradual perfecting of our credit machinery has made it possible for business men to secure the necessary funds with which to create new capital without antecedent restriction of consumption, and thus without the limiting condition which so materially retards the rate of capital accumulation. It is my thesis that during the period since the Civil War the rapid expansion of bank currency in consequence of a rapidly developing credit organization has resulted in a more rapid formation of capital equipment in the United States than would otherwise have been possible.

V. RELATION OF COMMERCIAL BANKING TO CAPITAL FORMATION

a) *In general*.—The relation of commercial banking to the process of capital formation may be understood only in the light of the analysis of the preceding articles of this series. It must be understood that for the moment we are not concerned with the phenomena of the business cycle.² We are considering,

¹ It is less true of the United States for the reason that our credit mechanism has been of tardier development (see analysis in Section V).

² The relationship of the business cycle to the problem is considered on page 875.

rather, the period of fifty years following the Civil War taken as a whole. It was during this period that the use of commercial banking facilities became nearly universal in the commercial centers and that the banking frontier of the United States gradually disappeared, resulting in a very great expansion of loanable funds. In 1866 the ratio of reserves to bank loans and investments in all our commercial banking institutions was 22.8 per cent, while by 1916 it had been reduced to 6.0 per cent. Between 1866 and 1916 the amount of cash on hand in our commercial banking institutions increased from \$231,900,000 to \$1,486,100,000. And during the same period the loans and investments increased from \$1,018,000,000 to \$24,646,400,000.¹ If the ratio of cash to loans and investments had remained at 22.8 per cent, as it was in 1866, we should have had, in 1916, \$6,523,700,000 of loans and investments instead of \$24,646,400,000.

What now is the relation of this improving banking organization to the apportionment of human energy between the creation of consumption and capital goods? The heart of the relationship lies in this: That the gradually expanding volume of bank currency—currency, it must be recalled, which is available equally with money for the manifold activities of business—has made it possible for business men to secure the funds with which to induce human energy to create capital goods without antecedent saving on the part of consumers. As a result of this process of expanding the volume of loanable funds, we find that a smaller curtailment of consumption is required in order to release funds for capital formation, thereby permitting the maintenance of a more effective demand for the products of additional capital.

Something more than this brief statement of the case is, however, required. We must inquire whether this expanding credit merely carries with it a general increase in prices. The algebraic expression of the quantity theory throws no light upon this problem because it does not face the question of causal relations between an expanding credit currency and an expanding volume of trade. Nor can one reach an adequate understanding of the relationship of bank currency either to prices or to the volume of production if he

¹ See *Journal of Political Economy* (May, 1918), p. 501.

erroneously assumes that commercial banks extend loans only for commercial purposes. If one assumes that goods are already produced and that the purpose of bank currency is merely to get them exchanged, an increase in bank currency would of course have no bearing upon the quantity of goods. In this connection Laughlin contends that an increase in bank credit does not raise prices, for the reason that the goods are already on the market and that the necessity of exchanging them merely calls forth the bank currency with which to effect such exchange, and that with the completion of the exchange the bank credit is automatically retired. Some of his critics have replied that the goods once exchanged disappear from the marketing process but that the credit once created will continue in the channels of circulation and thus serve to raise prices later, even though its initial creation may not have led to an increase of prices.

Now this controversy appears to be somewhat beside the point when it is appreciated that bank currency is used in the production of goods as well as in their exchange. Concretely, a corporation may borrow \$100,000 from a commercial bank, either by selling bonds to the bank or by borrowing on its short-time promissory notes, notes which are indefinitely renewed¹ so far as the system as a whole is concerned.² Let us assume that the \$100,000 thus

¹ See discussion of this in *Journal of Political Economy*, July, 1918.

² From some points of view it is useful to distinguish between fixed and working capital. But from other points of view this distinction has little validity. A modern business has a certain amount of funds of its own, and it borrows the remainder required. Of the funds that it borrows it may use those borrowed through the sale of securities exclusively for fixed-capital purposes, and it may employ the funds borrowed from commercial banks exclusively for working-capital purposes. The theory has been, as heretofore noted in this series of papers, that a hard-and-fast line should be drawn between these respective uses of funds. Suppose, however, a given business does borrow \$500,000 of fixed capital and \$200,000 of working capital. Suppose, to make the case very concrete, this is received by the business in the form of bills which are put in the cash drawer. Now when the bills are taken out for the making of the necessary payments the clerk gets those which came in from the sales of securities mixed with those that came in as a result of borrowing from the commercial bank, with the result that the \$200,000 which came from the commercial bank is used for fixed-capital purposes and that \$200,000 of the \$500,000 which came from the sale of securities is used for working-capital purposes. Some would be inclined to argue that since this \$200,000 had to be paid back in three months and since it had been put to

borrowed is used by the corporation in employing laborers¹ in producing raw materials. Let us assume also that in the absence of this "manufactured" banking currency the business manager would be unable to procure the funds necessary for producing the raw materials in question, for the reason that savings of pecuniary incomes had not been large enough to release the required funds. Under these circumstances the result of the creation and employment of bank currency in the production of raw materials is the creation of goods which otherwise would not be created. The same situation would obviously apply to the hiring of laborers for the construction of a factory. Tangible, material goods would come into existence as a result of the employment of these funds.

It is to be noted now that if this expansion of currency calls into existence new raw materials, it does not, at least immediately, lead to a proportional increase in prices. Both sides of the equation of exchange have been increased. Nor is the objection sound that while the employment of the bank currency may have brought into existence a new quantity of raw materials the currency continues to circulate while the goods do not and that in consequence there is shortly an inflation of prices. For the raw materials, which are dug out of the earth as a result of the hiring of laborers with monetary wages, do not cease to exist as soon as they have been produced. They pass from one form into another through many series of exchanges in the complicated processes of modern production.

the creation of fixed capital which liquidates itself only after long periods of time, this business would shortly find itself unable to pay its obligations. Now of course the truth of the matter is that it does not make the slightest difference how the particular funds borrowed from the commercial bank is employed so long as the business as a whole is properly organized. And in fact, since the corporation keeps an account with the commercial bank, and since it takes its borrowings from the commercial bank in the form of a deposit account, and since its funds derived from the sale of bonds and stock also take the form of a deposit account it is in practice often difficult for the corporation to know whether it is using the precise funds borrowed from the commercial bank for fixed or working purposes. Checks for both purposes are drawn against a common account. Only where separate accounts in different banks are kept for these funds, or where the funds are procured and used at different times, is it possible to know what specific use is made of the respective borrowings.

¹ These laborers may be drawn from the ranks of the unemployed or from immigration.

There is no more reason to assume that the goods are exchanged but once than that the currency functions but once; both become constituent elements in the whole complicated industrial and financial mechanism. This is not to argue, however, that a creation of bank currency through the processes which have been described and the utilization of it in employing labor which would not otherwise be employed always result in maintaining an equilibrium between the quantity of monetary instruments and the volume of trade. It is not at all improbable that the expansion of the monetary instruments may outrun the resulting increase in the volume of trade. But it seems to be clear from the foregoing analysis that under the conditions of modern business organization, with the gradual expansion of bank currency in the period between the Civil War and the present time, "other things" have not remained the same and that there is, moreover, a causal relationship between an expansion of bank currency and an increase in the volume of trade. Bank currency has provided business with funds which could otherwise have come only through savings; and if these monetary savings had been large enough to permit the rate of business expansion which has characterized the period in question, the foregoing of consumption necessary thereto must have rendered unprofitable much of the business expansion which in fact took place.

b) *Some results.*—It has been suggested by individuals who are of mathematical inclination and disposed to view the economic organization in equilibrium rather than in process that to argue that an increase in the quantity of credit currency increases capital is to argue that we can "beat the game" and raise ourselves by our boot straps. It should, however, be clear from the foregoing analysis of the process of capital formation under a pecuniarily organized and specialized society that this expansion of bank credit merely makes it possible for labor to work more steadily throughout the year and more hours a day. It has enabled society to have a more rapid rate of capital formation than would otherwise be possible, merely because it has decreased the necessity of restricting consumption in order to release funds for new-capital formation.

Is such capital formation, then, the result of sacrifice? The answer depends upon how sacrifice is defined. If it be assumed

that it is a sacrifice for labor to have steady employment throughout the year, then sacrifice is involved. If, on the other hand, it may be assumed that the laboring classes find life easier when there is full-time, steady work for everybody,¹ when consumption is high and some saving possible,² then capital formation effected through the process described above does not involve sacrifice, either individual or social. It is obvious enough that there is less social unhappiness in periods of full employment and good times than in periods of slack. It is obvious that there is less social distress, to use our former illustration, when 75 per cent of our energy is devoted to the production of consumptive goods, 15 per cent to replacement, and 10 per cent to the creation of new capital than when 60 per cent is devoted to the creation of consumers' goods, 15 per cent to replacement, and 5 per cent to new-capital formation.

Another significant aspect of the process relates to its effect upon immigration. This expansion of funds available for the manifold uses of business has made it possible to draw vast numbers of immigrants to the United States to do the rough work required; and it has substantially raised the standard of living of the immigrants, while enabling our own laboring classes to find places in the higher and more skilled positions in industry.

The results of this rapid expansion of industry during the period in question have not, however, been altogether beneficial. On the one hand it has tended to accelerate the rate of exploitation of our natural resources. It has meant so rapid a growth of industry that it has carried with it much in the way of waste and much in the way of uncouth materialism. Again it has been instrumental in the enormous growth in the size of industrial establishments with all that this involves in the way of governmental control and regulation. It has also tended to increase the concentration of population in urban communities and thus to create some of our most baffling problems in community life. The stupendous increase

¹ Recall that a lagging demand for the products of new capital does not mean merely shorter hours; it means permanent unemployment for many.

² Note that scarcely any saving is possible for the masses when the demand for labor is slack.

of immigration which it occasioned has also tremendously complicated the problems of national development, racial assimilation, and cultural growth.

Perhaps most significant of all, it has intensified the concentration of ownership and the development of an aristocracy of wealth. The enormous expansion of capitalistic industry was profitable only so long as consumption continued high. The thriftlessness of the masses of American people gave the impetus to an ever-expanding capitalistic production, while the commercial banking machinery provided the funds necessary for the development of new capital. While more thrift on the part of the masses would have tended to an equalization of ownership, it would have retarded the rate of capital formation as compared with the rate we have had under the impetus of high consumption and an expanding bank currency. This large consumption on the part of the masses has made it profitable for corporate industry continually to expand through the process of putting funds directly back into the business; it has thus given us vast fortunes for the relatively few and little if any provision for old age for the many.¹

At the conclusion of this discussion of the relation of bank currency to capital formation I hope my position may be clearly understood. The argument merely is that the expansion of bank currency has played no mean rôle in furnishing the funds required for capital formation; and to the extent that it has thus functioned it has, by relieving the necessity of curtailing consumption in order to release funds, accelerated the rate of capital formation. It remains true, however, that, during the period in question, a large portion of the funds needed for business expansion came from individual curtailment of consumption and investment of monetary income. And to the extent that this was true there was a curtailment of demand and resulting retardation of the rate of capital formation.

¹ The situation as regards the position of the masses must not be understood, however, to be hopelessly bad under the conditions which we have been portraying. It is something to enjoy a relatively high standard of living, even if no provision be made for old age; and, in fact, as we have already seen, there may be some provision for old age even under the conditions described. In any event the condition of the masses has been less insecure than it would have been in the absence of this expanding bank currency and its elimination of the necessity for relentless thrift.

c) *The transitional era.*—It is important to note here that we have been discussing the process of capital formation during a transitional era—during the period in which the use of the commercial banking machinery has been growing more universal and in which the banking frontier has been gradually disappearing. This transitional period is approaching an end, and we shall come to a time when it will be impossible further to decrease the ratio between cash reserves and loans and investments.¹ The organization of the Federal Reserve System, with its economizing of reserves, has extended somewhat the length of the transitional era;² and it is possible that it may be extended much farther in the future than now appears likely. But in any event we must sometime face the problem of capital formation under conditions where an expanding banking currency will no longer provide the funds without the necessity of foregoing consumption. It would appear from the preceding analysis that in the very nature of things capital formation must, in the absence of some new motive force to production—that is, some force other than relatively short-run profits—eventually proceed at a substantially retarded rate. The processes of capital formation in the future, as in the past, will, however, be greatly influenced by the phenomena which characterize the business cycle. Accordingly, attention must now be given to a consideration of capital formation as it is conditioned by the business cycle.

d) *The business cycle and capital formation.*—Periods of depression are marked by large bank reserves, because loans are not renewed in consequence of the enormous reduction in consumptive demand and of unsettled conditions generally. There is thus a plethora of loanable funds, and interest rates are low. It has already been pointed out that the development of widespread prosperity usually results from an expansion of consumptive demand which becomes cumulative. Our present problem, however, is to ascertain what governs the duration of the period of prosperity and of rapid capital formation.

¹ This whole discussion obviously raises some interesting speculations as to the relation of a steadily increasing volume of gold to capital formation.

² Incidentally, it would be interesting to study the relationship of the expanding volume of bank currency during the war to the increased production of war supplies.

Attention has already been directed to the fact that in the period immediately preceding a crisis there is no evidence of a lagging consumptive demand.¹ The causes of tension in the market are rather to be found on the productive side. The explanation of this apparent anomaly is to be found, at least in part, in the phenomenon of bank credit.

Among the important causes of the rising costs which lead to crisis, Mitchell lists

the accumulating tension of the investment and money markets. . . . It becomes difficult to negotiate new issues of securities except on onerous terms, and men of affairs complain of the scarcity of "capital." Nor does the supply of bank loans grow fast enough to keep up with the demand. For the supply is limited by the reserves which the bankers hold against their expanding demand liabilities.²

Now whether we are concerned with "commercial" loans or with investments in securities it is to be noted that the crux of the problem lies largely with the reserves of the commercial banking system, for, as we have already found, investment funds are to a large extent derived from commercial bank expansion, either directly by bank investments in securities or indirectly through collateral loans to underwriters, margin speculators, etc.³

The large reserves which exist in times of depression are gradually reduced by an expansion of loans during the period of prosperity. Many of the funds which are required for the expansion of business are thus derived from an expansion of credit.⁴ It is to be noted here that we are speaking of the elasticity of the commercial banking system—of its ability to stretch to meet the demands of a period of business expansion. This is, moreover, not merely an elasticity to provide the funds for exchanging goods already produced; it is an elasticity which provides funds for investment and productive uses as well as for exchange purposes.

In the absence of this expansion of loans and investments, one or the other of two results must occur in a period of business expan-

¹ See p. 863.

² *Business Cycles*, pp. 573-74.

³ See *Journal of Political Economy* (June, 1918), pp. 644 ff.

⁴ The ratio of reserves to deposits in the national banking system, e.g., was reduced between 1897 and 1907 from about 18 per cent to about 13 per cent.

sion: First, we would have an early increase of interest rates to a point which would so reduce the profit margins as to deter further expansion; second, we would have to secure the liquid funds required for business expansion by pecuniary saving, which would carry with it a curtailment of consumptive demand. The latter alternative would, however, obviously also check expansion. Hence we may conclude that the expansion of bank credit during the period of prosperity alone permits consumption to continue high even up to the period of crisis; or, to put it in another way, it either prevents interest rates from rising to an onerous level much more quickly than would otherwise be the case or else prevents a decline in consumption (in order to provide investment funds) from being a potent cause of business crisis. To put it in still another way, and in accordance with ultimate results, the expansion of bank credit during the upward swing of the business cycle permits the formation of a large quantity of capital goods which could not otherwise profitably be created.

It is of note, however, that during the prosperity periods of recent business cycles the degree of expansibility of bank credit has been dependent, not only upon the phenomena of the business cycle, but that it is in part due to the steadily improving credit organization of the United States since the Civil War. After our commercial banking machinery is fully developed, therefore, it is probable that the increasing costs in a period of expansion, due to the scarcity of "capital" and rising interest rates, will occur somewhat earlier than has been the case heretofore; or, to put it in another way, the duration of the period of expansion preceding a crisis will tend to be somewhat shorter than it has been in former periods.¹ This may possibly mean, in turn, a less severe depression; and if this, perchance, should prove the case the smaller accumulation of reserve funds during the slack period would in its turn again shorten the period of expansion before the rising costs occasioned by the scarcity of loanable funds could interpose its check to further capital formation. In other words, after the credit system has attained its highest point of development it is

¹ The duration of the period of expansion is of course a result of many factors, and the foregoing relates only to the influence of the conditions of the money market.

not improbable that the fluctuations of business will be somewhat less marked than they have been in the past.

It will always be true, however, that in the ebb and flow of business we shall still find the possibility of periods of relatively rapid capital formation. That is to say, even after our credit mechanism has reached its full development an expanding bank currency during periods of business recovery will provide the funds for new capital formation without a curtailment of consumption and its retarding influence. In every period of depression bank reserves fill up, and in every period of business expansion there is a gradual depletion of bank reserves down to the minimum permitted by the exigencies of the credit machinery.

But while, owing to the phenomenon of the business cycle, we will occasionally have periods of rapid capital formation in a highly developed credit organization we will also have periods of very slow capital formation. During the periods of depression the rate of capital formation is extremely slow, owing, as already indicated, mainly to the inadequacy of consumptive demand that follows the crisis. And taking the business cycle as a whole—the ebb as well as the flow—it would appear that the monetary and credit mechanism does about as much to retard as to accelerate the rate of capital formation.

VI. RECAPITULATION

It will perhaps serve to give definiteness to the purport of the extended and complicated analysis of the preceding pages if the conclusions reached are here gathered up and reduced to summary statement. The significant findings of the analysis appear to be as follows:

1. Capital formation under any form of industrial organization involves an apportionment of the productive energy of society between the creation of consumptive and of capital goods.
2. Under primitive conditions this apportionment is largely effected by individuals through the simple and direct process of devoting those portions of the year which, because of climatic conditions, cannot be utilized in the production of consumptive goods in the creation of capital goods. Under these conditions there is

little deterrent—save shiftlessness—to a rapid increase of productive equipment.

3. In a society where production is specialized and organized on a profit-making basis the process of capital formation is fundamentally changed. Consumption must be curtailed in order to release funds required by entrepreneurs in the creation of new capital; and this curtailment of consumption tends to restrict the profitable use of the new capital and hence to retard the rate at which such capital will be created.

4. The rate of capital formation in our present industrial society is not only a retarded one; it is also an uncertain one, involving a delicate balancing of conflicting opinions and economic desires on the part of the individual units who make up society. On the one hand, if the pecuniary savings of the people chance to be very small, not enough funds are released for the use of capitalists who wish to create new capital—and the high interest rates at the same time act as a deterrent to enterprise. This is overconsumption; and it tends to retard unduly the rate of capital formation. On the other hand, if pecuniary savings are very large and the funds for capitalistic enterprise abundant, the “relentless” saving, or overthrift, that has been involved serves to check the demand for the products of expanding industry and thus again to retard unduly the creation of new capital. A happy medium in the matter of pecuniary saving is therefore required—enough saving to furnish funds for increasing capital but not so much as to restrict unduly the demand for expanding industry. Now it goes without saying that neither the rationalistic reactions of a multitude of individuals in the matter of saving, nor the behavioristic psychology of the masses as conditioned by social and economic environment (whichever theory of individual motivation one may prefer), will serve to furnish automatically the precise amount of saving required in a pecuniarily organized society. It may be true, as the mechanistic economist would suggest, that both undersaving and oversaving tend to be corrected in time, and that an equilibrium is restored through the automatic working of economic forces. Possibly! But society meanwhile pays the costs. And in any event let it be remembered that this best rate of saving does not give us a maximum rate of

capital accumulation; it leaves us with a permanent, though variable, lag in the rate of expansion; and it prevents the continuous use of the full productive capacity of society.

5. Even if pecuniary savings were effected at the precise rate required by the intricate industrial organization of today it would still leave unsolved the problem of making individual provision for old age. The aggregate of individual spending must be kept in accordance with the requirements of the rate at which capital can profitably expand. If everybody attempts to make adequate provision for old age through saving and investment there is certain to follow in good time a curtailment of production that results in unemployment and part-time work, and this not only prevents the masses from making adequate provision for the future, but leads as well to reduced consumption and often to real privation. It is only where the many do not attempt to make adequate provision for old age that the few can amass investments sufficient to insure themselves against the vicissitudes of existence. It would be possible for all to make adequate savings for old age only where savings were equalized among people and the aggregate made to equal the precise amount required. And even then let it be re-emphasized that the rate of capital accumulation would not be such as to give us a full utilization of our productive capacity.

6. The process of capital formation under modern conditions appears certain to lead to ill-balanced social development. Those who bear the brunt of a failure, either of consumptive demand to expand rapidly enough to warrant new capital formation, or of pecuniary savings to be large enough to provide the funds required for new capital formation, are the laboring classes. Business profits are of course affected, often seriously, but the owners of capital are usually enough above the margin of subsistence to prevent privation; inactive business means for them merely lowered standards of living or a retarded rate of saving. But for the masses a lagging industrial demand means unemployment, low wages, and perpetually low standards of living, save during the periods of temporary prosperity that feature the upward swing of the business cycle. Witness in this connection the industrial history of modern England in the last few generations.

7. The rate of capital formation in the United States has been somewhat accelerated by the expansion of bank currency that attended the universalizing and perfecting of our commercial banking machinery. This development will cease, or at least rapidly taper off, in the not distant future.

8. Finally, we may conclude that the organization of business enterprise on a profit-making basis does not promote an efficient apportioning of the productive energy of society between long-run and short-run social requirements. It is essentially visionless so far as the larger national welfare is concerned.

It would seem that it is particularly opportune at this time, when we are about to grapple with the great problems of industrial and social reconstruction which lie before us, that we seek to devise some new machinery for apportioning the productive energy of society between the creation of consumption goods and capital goods. Some means must be developed for maintaining the level of production that has been attained under the impetus of war requirements. If a practicable constructive policy can be formulated for securing the rapid restoration of the capital that has been destroyed by the war and for its extension to meet the needs of future years, and if the opportunity can be provided for everybody to make full utilization of his productive power, we may anticipate not only an early recuperation from the economic devastation of war but also the development of higher standards of living and more widely diffused prosperity for all classes than obtained in the era before the war. If, on the other hand, economic recuperation is merely left to the operation of the "simple and obvious principles of natural liberty," we may confidently look forward to an indefinite period of uncertain and halting economic development—with its complement of political unrest and social disorder.

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COMPULSORY ARBITRATION IN GREAT BRITAIN DURING THE WAR

I. INTRODUCTION

At the outbreak of war in 1914 Great Britain faced the problem of securing the maximum of production with the least possible interruption. The increase in the cost of living, with the consequent movement for higher wages, caused several strikes in important industries prior to the outbreak of war. It was necessary for the government to bring labor and capital together on a common footing and to work out a plan whereby labor disputes would be settled before they became serious and menacing. England's solution of this problem was to supplement the voluntary co-operation of labor, capital, and the government by emergency legislation.

In August, 1914, one month after the beginning of war, an industrial truce was declared as a result of a special conference called by the Joint Board of the Trades-Union Congress, the General Federation of Trade Unions, and the Labor Party. This truce provided for an immediate effort to terminate all existing trade disputes and the discouragement of strikes and lockouts during the war period. As a result strikes were terminated, demands submitted to arbitration, and trade-union movements halted. Labor surrendered many attempts to increase and strengthen its position in industry. But this truce fell down, as is shown by the occurrence of important strikes, because of the "profiteering" of employers and the rise in the price of food. In March, 1915, the government took the next step in its program of securing industrial peace by voluntary co-operation with labor. This attempt, which was of a more formal nature, resulted in the Treasury Agreement. The important feature of this agreement was that "during the war period there should in no case be any stoppage of work upon munitions or other war work." Disputes were to be settled by voluntary arbitration and negotiation, and no binding effects were given to the agreement.

At this time there already existed a group of regulations known as the Defence of the Realm Act. Under this law severe penalties

were provided for persons "suspected of acting . . . in a manner prejudicial to the public safety or the defence of the realm." It applied to stoppages of work only as regards those who illegally incited workmen to strike. Because of the nature of the offenses within this act, its powers were brought into play only in extreme cases.

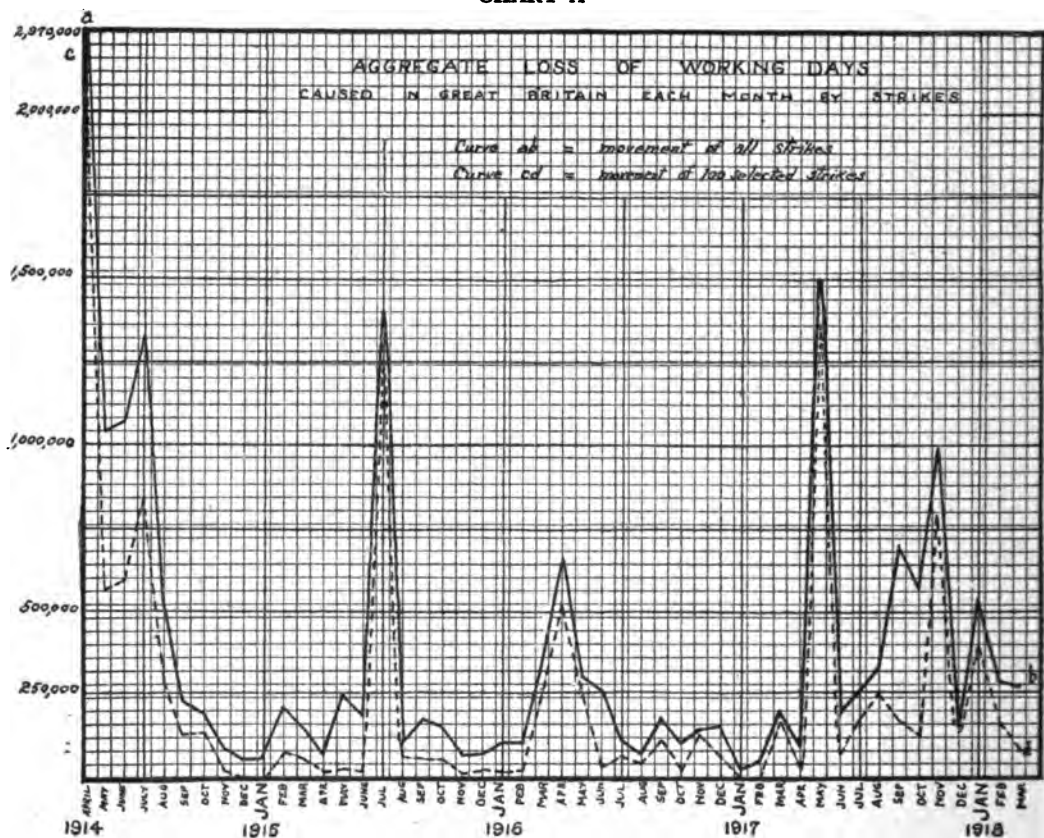
Strikes and lockouts were actually made illegal by the Munitions of War Act of July 2, 1915. The principal objects of this Act were the prevention of disputes, the abolition of trade-union regulations, and the limitation of profits. Section 2 of the Act provided that "an employer shall not declare, cause, or take part in a lock-out, and a person employed shall not take part in a strike, in connection with any difference . . . unless the difference has been reported to the Board of Trade, and twenty-one days have elapsed since the date of the report, and the difference has not during that time been referred by the Board of Trade for settlement in accordance with this Act. . . . If any person acts in contravention of this section, he shall be guilty of an offense under this Act." Section 7 provided that no workman could leave his employment without having secured a "leaving certificate" from his employer, under penalty of six weeks' unemployment. A workman was subject to a fine of £5 for each day on strike, and an employer was subject to a fine of £5 for each man locked out. The Act has been twice amended, first in January, 1916, and again in August, 1917. In general these amendments gave the workmen more freedom of movement, especially as regards the issuance of leaving certificates, and increased the extension of awards under the Act. On October 15, 1917, by proclamation, the Minister of Munitions, Winston Churchill, acting under powers granted him by the second amendment of the Act, 1917, repealed the section providing for leaving certificates and gave the workmen the right to leave their employment for other munitions work.

II. MOVEMENT OF STRIKES: 1914 TO 1918

The chart on page 884 shows the labor situation in Great Britain with reference to the occurrence and extent of strikes just prior to and during the war period. The figures upon which curves

ab and *cd* are based have been secured from the files of the *Board of Trade Labour Gazette* (now known as the *Labour Gazette*), the official government labor publication in the United Kingdom. From August, 1914, to March, 1918, inclusive, there were 2,504 strikes reported, in which 1,740,923 men were involved and which

CHART A



caused a total loss of 13,299,971 working days. Curve *ab* of the chart shows the movement of these 2,504 strikes. Curve *cd* shows the movement of about 100 selected strikes, comprising the most important ones, during the same period. It may be noted that there is no general movement of strikes either upward or downward, but that the large number of working days lost is due to

spontaneous outbursts on the part of workers in large and important industries. It is important to note that in practically every case of a strike or group of strikes which results in the formation of a peak on the chart the stoppage of work occurred in an establishment covered by the Munitions Act, either as a "controlled establishment" or otherwise, and therefore represents a violation of the law. The only indication of a strike "movement" may be said to have occurred during the last few months covered by the chart, beginning about September, 1917. On an average nearly 80,000 men were involved in strikes in each of the succeeding months. Table II sets out in detail the selected strikes covered by curve *cd*.

The immediate results of the industrial truce are seen by the direction of the curve during the first months covered by the chart. The number of working days lost through strikes dropped from nearly three million in April, 1914, to a half-million in August, 1914. It is evident that the patriotism and loyalty of the workers who were on strike at the beginning of the war played a large part in the immediate resumption of work in important industries. During the last five months of 1914 there were only 5 per cent as many workmen engaged in strikes as there were in the first seven months of the year.

The rise in the curve for 1915 shows the results of the increased cost of living, not followed by an increase of wages, causing a great deal of unrest. There was likewise a general feeling among the workers of the country that they were not receiving a proper share of the large profits flowing to their employers. Under these circumstances the Treasury Agreement, referred to above, was drawn up in March of that year. This agreement was entered into by the individuals and not by the British labor movement. Practically all of the important unions, with the exception of the miners', took part in it. The government also entered into individual agreements with certain unions about this time, such as the Munitions Output Compact with the Engineers and the Shells and Fuses Agreement, to induce labor to relax its trade-union practices. But these agreements proved to be merely the forerunners of the Munitions of War Act. The Act went into effect on July 2. Just previous to this the coal miners of South Wales had presented their demands

for higher wages to the operators with the strike alternative. Despite the proclamation under the Act bringing the coal miners within its provisions, 260,000 miners laid down their tools and remained on strike for a total of nine days in two periods. The strike was settled only by the act of Lloyd George in going to the scene of the disturbance and conceding the demands of the men. Since no one was to be penalized for the part taken in the strike it was recognized that the Munitions Act had failed to contribute to the result. The cost of this strike has been estimated at £1,500,000.

It is noticeable that after the passage of the Act, although strikes did occur, on the whole they were of much less duration than those previous to its passage. But this fact did not result in any lowering volume of strike losses. From July, 1915, to March, 1918, 1,871 strikes were reported, involving directly and indirectly 1,524,930 workmen, causing a loss of 11,316,700 working days. The latter period, which is covered by the Act, represents 75 per cent of the total war period, although 85 per cent of the total time lost through strikes during the war occurred at this time.

With the settlement of the coal dispute the curve makes a sharp descent and returns to its former position. During the remainder of 1915 and the early part of 1916 industry was comparatively quiet, with an average of approximately 100,000 working days lost per month. In 1916 there was not much deviation in the direction of the curve, the highest point being reached in the month of April. There was a decline in the number of strikes, the number of work people involved, and in the total time lost through strikes. Some uneasiness on the part of the men occurred during the year, owing to the opposition to the Munitions Act and to the introduction of military compulsion.

On January 27, 1916, the Act was amended, with the object of securing the workman against a neglect on the part of the employer to issue a certificate and against the possibility of not being employed because he had not come under the section at all. Provision was also made for notice to workmen before dismissal. These changes, however, did not wholly do away with the opposition of labor to this portion of the law. Deportations of strike leaders in April accounted for an increase in the number of days lost; a very

large strike occurred also in the textile industry of Dundee for an increase of wages. It was noticeable toward the end of the year that the number of disputes was becoming fewer and agreements were reached more quickly than had formerly been the case, but disputes were far from disappearing.

The first few months of 1917 continued to maintain this state of comparative peace and quiet in industry. Beginning in May, however, a period of widespread unrest set in, which extended throughout the rest of the year and into 1918. For the entire year there was an increase of 18 per cent in the number of strikes reported, while the number of working days lost increased by nearly 120 per cent over 1916. The series of strikes in May spread to all of the important engineering industries of the Kingdom. Before these strikes were settled a total of 160,000 men became idle and the time lost amounted to nearly one and one-half million working days. The next high point was reached in November, when 2,600 colliery examiners of South Wales and Monmouthshire struck over the question of recognition of the union, rendering 127,700 other workers idle. The men succeeded in gaining their point.

A very important modification of the Munitions of War Act also took place during the same year. By a new act, dated August 21, 1917, the Minister of Munitions, among other things, was given power to repeal the leaving-certificate provision of the original act (sec. 7) when he was satisfied that it could be repealed consistently with the interests of the nation. He was also empowered to extend awards applying to the majority of a trade to the minority. This had been promised to the trade-union officials six months before. No workman employed on or in connection with munitions work could be discharged on the ground that he had joined or was a member of a trade-union or that he had taken part in a strike. As a result of the industrial unrest which was prevalent earlier in the year the government set up eight commissions to inquire into the matter. These reports pointed out that the labor question was not being treated in the most efficient manner. Numerous examples were mentioned of the unnecessary application of the very stringent Defence of the Realm Act. The operation of the Munitions of War Acts, and especially the leaving-certificate

feature, had resulted in the increasing antagonism of labor toward the government labor administration. Delay in settling disputes, the high cost of living, profiteering, employers' spy systems, allegations of rate-cutting, withdrawal of the trade-card scheme, and the introduction of dilution on private work were shown to be responsible for most of the important strikes of the year. During the early months of 1918 the curve shows a tendency to maintain a comparatively high position. The important disputes which were reported occurred in the coal-mining, engineering, and shipbuilding trades.

Thus in the thirty-three months that the Munitions Acts have been in existence we have reports which show that over 1,500,000 workmen have violated these acts by participating in strikes. If these workmen were to be fined according to the provisions of the law the total amount of their fines would be over 55,000,000 pounds sterling. Table I shows how the 2,504 strikes which have occurred during the war are divided according to industries and trades.

III. MOVEMENT OF THE MOST IMPORTANT STRIKES

Table II consists of about one hundred selected strikes which have occurred during the period covered by the chart. These strikes are the most important ones which have occurred during that time. Not every month is represented on the table and in some months the strikes are more rigidly selected than in others. Their movement is shown by the dotted line *cd*. It should be noted that there is a marked similarity in the direction of the two curves. It is likewise noteworthy that for the most part the few important strikes which occurred each month represent practically the entire time lost by all the strikes during the same month. Thus we can say, generally, that the industrial unrest for the immediate pre-war period and for the war period is the result of a few important strikes, which were of sufficient extent and duration to cause a large amount of lost time in the particular industries affected.

In Table II there are 80 selected strikes which took place after the passage of the Munitions Act, 1915. These strikes, therefore, may be said to tell, with comparative accuracy, how the Act actually worked out in practice. In these 80 strikes 989,401 men

TABLE I
STRIKES IN GREAT BRITAIN (BY INDUSTRIES) AUGUST, 1914, TO MARCH, 1918

Industry	1914 (AUGUST TO DECEMBER)			1915			1916			1917			1918 (JANUARY TO MARCH)		
	No.	Men Involved	Aggregate Loss of Working Days	No.	Men Involved	Aggregate Loss of Working Days	No.	Men Involved	Aggregate Loss of Working Days	No.	Men Involved	Aggregate Loss of Working Days	No.	Men Involved	Aggregate Loss of Working Days
Building.....	34	1,244	50,874	66	15,635	135,204	76	7,679	163,600	53	6,897	85,300	41	20,649	214,700
Coal mining.....	44	21,247	254,287	79	297,801	1,640,899	67	61,611	310,600	116	267,045	1,098,400	31	24,359	139,500
Other mining.....	6	399	19,796	6	337	15,550	7	1,159	10,000	12	7,100	71,400	45	25,686	150,000
Engineering.....	16	2,363	277,947	97	24,468	227,768	59	49,233	223,600	94	316,499	2,427,000	45	13,585	205,900
Shipbuilding.....	16	1,177	20,113	46	6,439	49,741	28	22,111	70,900	49	40,091	326,000	35	17,501	186,500
Other metal.....	16	2,097	61,559	48	15,403	88,190	26	4,483	11,100	38	30,109	165,100	15	20,625	90,400
Textile.....	16	3,138	284,188	69	33,107	373,451	75	61,258	1,106,100	65	62,887	653,100	14	3,790	36,400
Clothing.....	13	1,463	4,899	40	5,525	27,699	44	15,774	156,700	43	13,043	145,800	14	2,161	12,400
Transport.....	20	1,791	24,528	86	26,600	177,522	60	35,278	155,000	40	26,740	188,400	14	19,475	123,700
Miscellaneous.....	46	1,479	3,425	169	26,556	309,171	139	26,510	324,200	179	50,317	351,300	72	146,831	1,144,600
Total.....	227	36,293	1,003,537	706	452,571	3,038,134	581	284,396	2,599,800	688	820,727	5,513,900	302		

Total number of strikes, 2504; total number of workmen involved, 1,740,923; total aggregate working days lost, 13,299,971.

TABLE II
100 SELECTED STRIKES IN GREAT BRITAIN, 1914 TO 1918

Date Began	Industry	Locality	Workmen Involved	Duration in Days	Aggregate Working Days Lost	Cause or Object	Result
1914							
Jan. 26	Building	London	20,000	170	Not known	Refuse to work with nonunionists	Settled outbreak of war
Feb. 16	Coal mine	Yorkshire	150,000	52	Not known	Wages dispute	Joint district board to settle
Mar. 2	Molder	Warrington	8,38	52	43,956	Recognition of union leaders	Strikers reinstated
April 1	Electrical	London	900	158	97,100	Advance in wages; union rules	Wages raised; demands granted
June 7	Iron and steel	Glasgow	995	83	81,585	Advance in wages	Arbitrator appointed
June 17	Tube works	Swansea	1,451	18	26,118	Dismissal of certain men	Work resumed
July 3	Engineer	Accrington	4,550	94	423,000	Advance in wages; union rules	Wages raised; agreement with union
July 3	Engineer	Woolwich	12,000	5	60,000	Reinstatement of a man	Court of inquiry appointed
July 11	Coal mine	Merthyr Tydvil	6,000	5	30,000	Refuse to work with nonunionists	Nonunionists joined union
July 13	Decks	Mersey	3,000	21	63,000	Recognition of union	Board appointed
Oct. 12	Building	Cork	1,440	34	17,880	Advance in wages	Wages increased
Nov. 10	Coal mine	Rushoe	1,375	4	5,500	Minimum wage act	Compromise
Nov. 18	Seaman	Liverpool	1,000	10	10,000	Advance in wages	Wages increased
1915							
Feb. 16	Engineer	Clyde	7,800	14	109,200	Advance in wages	.....
Feb. 26	Brass molder	Clyde	150	22	12,100	Advance in wages	Arbitration
Mar. 6	Decks	Birkenhead	2,000	8	16,000	Working conditions	Arrived at agreement
April 2	Iron caster	Walsall	870	18	10,560	War bonus of 10 per cent	7½ per cent bonus granted
April 5	Coal mine	Pontardawe	840	7	5,880	Union rules	Nonunionists joined union
May 3	Engineer	Bristol	700	8	5,600	War bonus of 15 per cent	10 per cent bonus granted
May 8	Building	Northampton	610	24	15,336	Advance in wages	Wages increased
May 17	Building	Manchester	170	41	8,970	Working conditions	No increase
June 22	Explosives	.....	2,000	7	14,000	Advance in wages	.....
July 1	Coal mine	South Wales	60,000	7	180,000	Advance in wages	Wages increased
July 15	Coal mine	South Wales	200,000	7	1,200,000	Advance in wages	Wages increased
Aug. 25	Coal mine	South Wales	12,000	7	84,000	Advance in wages	Wages increased
Sept. 7	Coal mine	Rhondda	2,584	7	11,420	Trade-union rules	Wages increased
Sept. 13	Colliers	Rhondda	1,200	7	11,420	Nonunionists employed	Nonunionists joined union
Sept. 20	Gateshead	Gateshead	995	36	35,820	Working conditions	Demands granted
Oct. 4	Coal mine	Barnsley	1,770	8	14,160	Nonunionists employed	Nonunionists joined union
Oct. 18	Coal mine	Aberdeen	1,780	7	12,460	Nonunionists employed	Nonunionists joined union
Nov. 29	Coal mine	Rhondda	3,403	7	26,814	Nonunionists employed	Nonunionists joined union
Dec. 13	Engineer	Yorkshire	500	134	67,000	15 per cent advance in wages	Modified increase

1916	Jan.	1.....	Coal mine	Newport	989	3	2,967	Wage dispute	Investigation by Conciliation Board
	Feb.	1.....	Engineer	Glasgow	365	6	2,190	Introduction of female labor	Work resumed
	Feb.	17.....	Carriage	Glasgow	2,400	13	6,000	Advance in wages	Amicable settlement
	Mar.	17.....	Engineer	Glasgow	1,800	15	30,000	Working conditions	Work resumed on old terms
	Mar.	23.....	Engineer	Belfast	1,800	15	6,000	Working conditions	Work resumed on old terms
	Mar.	24.....	Textile	Dundee	10,000	64	Not known	15 per cent advance in wages	Work resumed
	Mar.	29.....	Decks	Liverpool	15,000	64	60,000	Dissatisfied with wage award	Nonunionists joined union
	Apr.	7.....	Coal mine	Ayr	816	16	12,056	Refuse to work with nonunionists	Wages increased
	Apr.	7.....	Wire	Dunaster	378	6	2,268	Advance in wages	Work resumed
	June	26.....	Engineer	Barrow	7,000	4	42,000	Dilation of labor	Arbitration
	July	3.....	Shipyard	Birkenhead	10,500	4	42,000	Hours of labor	"Score" prices advanced
	July	12.....	Coal mine	Bishop Auckland	1,500	6	7,500	Dissatisfied with wage award	Work resumed unconditionally
	July	17.....	Coal mine	Cardiff	1,870	6	11,220	Discharge of certain officials	ally
	Aug.	1.....	Coal mine	Hamilton	1,328	3	3,984	Working conditions	Change granted
	Aug.	22.....	Coal mine	Rhondda	3,000	11	33,000	Working conditions	Increase granted
	Aug.	28.....	Textile	Wigan	4,000	30	120,000	5 per cent advance in wages	Increase granted
	Oct.	20.....	Engineer	Crewe	3,269	1	3,269	Working conditions	Change granted
	Oct.	28.....	Clothing	.....	2,700	40	108,000	25 per cent war bonus	Partial concession
	Nov.	4.....	Coal mine	.....	1,537	7	10,759	Payment of wages	Redress promised
	Nov.	16.....	Engineer	Sheffield	12,000	3	36,000	Release of a man from force	Engineer released
	Nov.	30.....	Engineer	Manchester	15,000	6	90,000	Dissatisfied with wage award	Investigation; work resumed
	Dec.	7.....	Coal mine	Mounouthabire	9,000	6	18,000	Advance in wages	Increase granted
	Dec.	11.....	Shipbuilding	Liverpool	4,000	6	24,000	Advance in wages	Work resumed; investigation
1917	Jan.	8.....	Machinists (female)	Leeds	2,776	2	5,552	War bonus; dismissal of a girl	Work resumed
	Jan.	29.....	Coal mine	Hamilton	2,000	2	4,000	Wages and other grievances	Temporary settlement
	Feb.	15.....	Aircraft	Lincoln	300	5	1,500	Advance in wages	Sliding-scale bonus promised
	Mar.	19.....	Engineer	Tyne	15,500	2	93,000	Advance in wages	Increase of 2s. per week
	Mar.	21.....	Engineer	Barrow	18,000	12	96,000	Alleged cut of time allowance	Change granted
	Apr.	4.....	Coal mine	Newport	1,796	2	3,592	Working conditions	Change granted
	May	1.....	Engineer	General	100,000	9	1,440,000	Dilation of labor; trade-card scheme	Conferences
	May	25.....	Shell filling	Glasgow	10,000	9	20,000	Advance in wages	Modified increase granted
	June	15.....	Iron ore	Barrow	860	2	5,280	Wage dispute	Minister of Munitions Inquiry
	June	11.....	Malleable iron	Walsall	1,700	5	5,500	Wage award	Investigation
	June	15.....	Rivets	Clyde	2,546	9	22,914	Wage award	Increase granted
	June	25.....	Engineer	Swansea	7,500	9	45,000	Advance in wages	Increase granted
	July	6.....	Engineer	Widnes	8,500	12	78,000	Advance in wages	Increase granted
	July	24.....	Coal mine	Elbow Vale	5,500	7	59,500	Working conditions	Inspection ordered
	Aug.	25.....	Coal mine	Wednesbury	3,500	7	21,000	Wage claim	Work resumed
	Aug.	27.....	Thues	Wednesbury	1,400	13	18,000	Criminal	Official resumed
	Aug.	31.....	Iron	Cumberbund	5,000	13	55,000	Advance in wages	Increase granted
	Aug.	3.....	Coal mine	Yorkshire	27,000	16	102,000	Recruiting scheme	Scheme suspended

TABLE II—Continued

Date Began	Industry	Locality	Workmen Involved	Duration in Days	Aggregate Working Days Lost	Cause or Object	Result
1917—Cont.							
Aug. 20.....	Coal mine	Swansea	1,568	46	62,928	Minimum wage	Granted
Sept. 6.....	Coal mine	Wakefield	1,547	45	69,615	Price of coal to miners	Price lowered
Sept. 14.....	Iron	.....	6,000	17	102,000	Arbitration award	Negotiations
Sept. 17.....	Coal mine	Cardiff	2,300	18	41,400	Working conditions	Change granted
Sept. 20.....	Coal mine	Walsall	12,000	3	36,000	25 per cent advance in wages	Negotiations
Oct. 16.....	Steel	Merthyr Tydvil	2,000	8	16,000	Wage dispute	Negotiations
Oct. 20.....	Aircraft	London	4,000	6	24,000	Payment system	Amicable settlement
Oct. 30.....	Coal mine	Mansfield	798	29	23,142	Refuse to work with nonunionist	Only union men to be employed
Nov. 1.....	Colliery	South Wales	130,300	3	390,900	Recognition of union	Union recognized
Nov. 12.....	Shipbuilding	Cowes	6,000	9	54,000	High retail price of coal	Price reduced 10s. per ton
Nov. 14.....	Engineer	Belfast	4,000	16	64,000	Bonus	Granted
Nov. 26.....	Aeroplane	Coventry	50,000	7	350,000	Recognition of shop stewards	Local conferences
Dec. 19.....	Shipbuilding	Belfast	3,000	10	30,000	Dissatisfied with wage award	Negotiations
Dec. 27.....	Engineer	Birkenhead	1,121	6	6,726	Bonus of 12½ per cent	7½ per cent allowed
Dec. 31.....	Iron and steel	Sheffield	15,000	6	90,000	Bonus of 22½ per cent	.....
Dec. 27.....	Engineer	Clyde	8,000	6	48,000	Bonus of 12½ per cent	7½ per cent allowed
Dec. 31.....	Engineer	Manchester	3,604	5	18,020	Bonus of 12½ per cent	Granted
1918							
Jan. 11.....	Building	South Wales	10,000	30	Not known	Advance in wages	Work resumed; negotiations
Jan. 16.....	Engineer	Clyde	1,276	30	38,280	Over wage award	Negotiations
Jan. 16.....	Engineer	Birmingham	8,000	4	32,000	Transference of a worker	Demand conceded
Jan. 22.....	Engineer	Darlington	4,000	9	36,000	Bonus of 12½ per cent	Negotiations
Feb. 2.....	Coal mine	Mansfield	1,770	12	21,240	Pit boy struck by "corporal"	Pit boy prosecuted
Feb. 13.....	Coal mine	Barnesley	2,477	10	24,770	Advance in wages	Increase granted
Feb. 19.....	Engineer	Belfast	2,676	17	45,492	Advance in wages	Negotiations
Feb. 27.....	Engineer	.....	15,597	4	62,388	Bonus of 15 per cent	Arbitration
Mar. 7.....	Engineer	Southport	1,000	11	11,000	Dismissal of a workman	Workman reinstated
Mar. 13.....	Coal mine	South Yorkshire	1,200	7	8,400	Advance in wages	Work resumed; inquiry
Mar. 14.....	Colliery	Ebbw Vale	5,000	1	5,000	Dismissed workman	Work resumed
Mar. 19.....	Engineer	Leeds	6,993	8	55,944	Dismissed workman	Workman reinstated

Totals for 80 selected strikes, July, 1915, to March, 1918: 969,401 workmen involved; 8,351,190 working days lost.

took part and an aggregate loss of 8,351,190 working days resulted. During this period 1,841 strikes were reported; but the 80 large strikes, though only little more than 4 per cent of the total, involved about 65 per cent of the total number of men who took part in strikes and account for nearly 74 per cent of the total number of working days lost in all the strikes since the Act went into effect. About three-fourths of all the strikes reported were over questions of wages.

Most of the strikes for increased wages were settled by granting the increases demanded. In many cases of strikes for other objectives the men's demands were conceded. In only a relatively small number of instances did the men lose outright. The larger strikes were in the main settled by the personal intervention of some governmental official, who was able to deal with the strikers by proceeding to the scene of the disturbance and bringing the different parties together. A very frequent agency used was a plea on the basis of the country's war needs, and in many cases this was the sole reason for the settlement of the strike. By considering a few of the very important strikes it is possible to ascertain just how many of the strikes were actually dealt with by the government.

The wages agreement between the South Wales coal miners and owners expired about July 1, 1915. Dissatisfaction among the men had been growing for some time owing to reports that the operators were making enormous profits out of the war. The men asked that a new agreement be made at the expiration of the old one, but the owners refused to do so during the war and negotiations between the parties were broken off. The immediate question arose over the establishment of a new standard of wages. The standard which was being used at that time had been fixed in 1877 and 1879, when prices were low. The miners asked that the standard be raised by 50 per cent. They also demanded that they be allowed a minimum which was to be 10 per cent above the new standard, and in addition an actual and immediate raise in wages of 5 per cent. They desired a three years' agreement. The Board of Trade attempted to settle the differences in conference with the owners and the South Wales Miners' Federation. The men delivered the strike ultimatum. In order to keep the men at work while negotiations were being carried

on partial concessions were granted by the owners and the men were hired on day-to-day contracts. The coal owners replied to the men's demands for an advance of 20 per cent on actual earnings by an offer of 10 per cent. On July 13, 1915, Runciman, president of the Board of Trade, announced in the House of Commons that the government had decided to apply by proclamation the Munitions of War Act for settlement. This proclamation failed to have any effect, and a card vote was taken as to the time for beginning the strike. This resulted in a decision to stop work, by 88,950 votes to 47,450. Lloyd George then went to Cardiff, along with Runciman and Arthur Henderson. Lloyd George was successful in inducing the strikers to give way, but only after conceding to them substantially their own terms. The agreement was to continue for six months after the war and thereafter was to be subject to three months' notice from either party before its termination. Despite the proclamation the penalties provided by the Act for striking were not to be imposed.

The reports of prosecutions under the Act are very vague and incomplete. The official *Command Papers*, the columns of the *Manchester Guardian* and *London Times*, and the *Labour Gazette* have not sufficed to produce the material for an analysis of this feature of the Act. The charges were made that reports of all the violations and prosecutions were not given out to the public. In November, 1915, the *New Statesman* declared that every day in the week from sixty to seventy cases were heard by the courts and that the legal chairmen were not giving the men an opportunity to protect themselves. In October three shipwrights were imprisoned, and 97,000 organized workmen threatened to cripple all the factories on the Clyde if the men were not released, as a result of which the Ministry of Munitions was forced to release the men. Lord Balfour, in a report on the grievances of the Clyde Munition Workers in 1915, expressly recommended the abolition of all liability to imprisonment under the Munitions Act.

The engineering disturbances of March and April, 1916, brought to light a new movement among the workers, which may be termed the "shop steward" movement. At that time it was officially reported that strikes had been brought about at different times by

a self-appointed body known as the Clyde Workers' Committee. It seems that this body had decided to hold up the production of the most important munitions in the Clyde district, with the object of compelling the government to repeal the Military Service Act and the Munitions Act and to withdraw all limitations upon increases of wages and strikes. A series of strikes occurred about this time which indicated that a systematic plan was under way by which a certain number of very vital workers in different plants would be withdrawn at the same instant. The grievance usually presented was a demand for the free movement of a workman throughout the shop for the purpose of investigating what was being done with unskilled workers in different parts of the works. The situation grew so serious that the Munitions Ministry felt it necessary to take action under section 14 of the Defence of the Realm Act and requested the military authorities to remove six of the ringleaders. This was done. The movement of which these men were the leaders was repudiated by the officials of the trade-unions. The action of the government in having the men deported, although it gave rise to protest and in some cases greatly extended the number of men on strike, was rather successful in leading to a termination of the disputes. The Amalgamated Society of Engineers refused to protest against the deportations. Later, three more men were deported, and 30 of the strikers were fined £5 each at Glasgow. Sheriff Fyfe held that the men must return to work pending a settlement.

Besides the fact that the number of disputes became smaller during 1916, as we have already seen, agreements to settle them were reached more quickly than had formerly been the case. In the middle of November a serious wage dispute again arose in South Wales, and the new method adopted by the government to meet such difficulties was to make a regulation under the Defence of the Realm Act under which, whenever the Board of Trade were of the opinion that it was necessary for securing the public safety and the defense of the realm, they should have the power to take over any coal mine in an area in which the regulations applied. On December 1, 1916, this regulation was applied to the South Wales coal field. The men were greatly displeased with the action of the

government in invoking the Defence Act in order to bring the dispute to an end. The Coalowners' Association likewise protested against the action of the government. Soon after government control went into effect the Board of Trade granted a wage increase of 10 per cent, dating from December 1, 1916.

In June 5,500 engineers and allied tradesmen went on strike at Barrow because of the alleged introduction of diluted labor on skilled men's work. It was explained to the men that their strike was a violation of the Treasury Agreement between their unions and the government and also a breach of the Munitions Act. The strike was repudiated by the Executive Council of the Amalgamated Society of Engineers. A notice was then published giving the men forty-eight hours in which to return to work, with an intimation that, failing to do so, proceedings would be taken under the Defence of the Realm Act against those who had instigated the strike and under the Munitions of War Act against those who had taken part in it. All picketing was prevented and all public houses were closed. The threat of the government was successful in ending the strike. The same method was brought into use in the case of the strike of the Mersey boiler-makers in December, with the same results.

Early in 1916 the Ministry of Munitions published a report on prosecutions under the Munitions Act. Up to the end of the first week of February 555 munition workers had been convicted for striking by the tribunals established under the Act, and the average of the fines imposed had worked out at a little under 30s. for each man convicted. Seventy-one employers had been convicted for enticing workers away from their employment, and were fined on an average over £5 each, exclusive of costs. Before the local tribunals the greater number of cases were applications by workmen for leaving certificates. There were 5,658 of these applications, of which 1,447 were granted and 2,510 refused, while 1,472 were withdrawn or dismissed. In 229 cases the court decided that no certificate was required. There were altogether 4,054 convictions for breaches of workshop rules, for which fines to the amount of £3,292 15s. were imposed. According to this report, about one-

fifth of 1 per cent of the men taking part in strikes were actually prosecuted under the Act.

Several of the strikes which occurred during 1917 are indicative of the general lack of faith among the men as to the practicability of government arbitration in settling grievances with dispatch. In some cases the men alleged that the time allowance for the work done under the premium bonus system had been cut and that employers were entirely disregarding the arrangement. Disputes on this point had been occurring for many months, and the object of the men in striking, they said, was to bring the whole question to the notice of the government. In a strike upon this point in March, at Barrow, certain shop stewards acted upon their own initiative, without the sanction or knowledge of the recognized trade-unions. The government posted notices calling attention to the gravity of the strike and to the Defence Act, and announcing that it proposed to take action under it after twenty-four hours unless work was resumed. Despite the advices of the leaders the men had voted to remain on strike, but after the threat of the government they returned to work. The grievances were to be settled later by local conference.

The disturbances of May, 1917, which practically crippled the entire engineering industry of Great Britain, produced a very serious situation in the supply of war materials. The immediate causes of the stoppages in different localities varied somewhat, but the general spirit of unrest had been prevalent for some time. The walkout followed upon the action of the government in withdrawing the trade-card scheme and introducing dilution in private engineering work. The government felt that such measures were necessary for an increase in production and promised the men that it was only a temporary solution. In general the strikes represented a movement of the rank and file; the officials of the trade-unions had nothing to do with it. In connection with these strikes an employer of Rochdale was summoned before the Munitions Tribunal at that place for two breaches of the Munitions Act, which were alleged to have been responsible for the stoppage in that district. The employer was fined, the charge being that he had failed to give

due notice to the men of a change of working conditions which it was desired to introduce. Leading government officials went to the different engineering centers to attempt to settle the differences. Notices were issued by the government that the Defence Act would be used to settle the strike if necessary. The press declared that the strike was as much a protest against the executive authority of the trade-unions as a protest against any action of the government. The Amalgamated Society of Engineers announced that they had not authorized any cessation of work. The *Manchester Guardian* deplored the unwisdom of the government policy of withholding information from the public and prohibiting discussion in the press of a free and salutary public opinion. While the men in some districts balloted to return to work, others joined the strike movement, thus increasing the gravity of the situation. In the London region seven strike leaders were arrested under the Defence Act, charged with promoting strikes and attempting to impede production and transportation of war material. These men were probably members of the Shop Stewards' Committee. The strike was finally brought to an end by the intervention of the Prime Minister. The arrested men were released on their own recognition and no further arrests were made. The unofficial leaders of the strike were to leave further negotiations with the government regarding existing differences to the trade-union officials. These results were accomplished at a conference at the Ministry of Munitions between the representatives of the Shop Stewards' Committee and the Amalgamated Society of Engineers. After the settlement there were some minor prosecutions on account of the strike, for the most part of shop stewards, but in practically every case the prosecutor asked to have the charges withdrawn after the return to work.

Other disputes of the year which threatened to become very serious were those of the Locomotive Engineers and Firemen in August and the South Wales miners in November. In the former case the Board of Trade averted a strike by making certain promises to the railway men, and in the latter case the demands of the men for recognition of the union were conceded. About the same time

there occurred a "down-tools" ballot in South Wales on the "comb-out" for military service. The South Wales Miners' Conference had broken away from the agreement approved by the Miners' Federation of Great Britain. It was decided, however, to resume work forthwith "rather than imperil our nation in these days of stress and difficulty," and to negotiate while at work.

The important event of the early months of 1918 was the friction which developed between the government and the Amalgamated Society of Engineers over the government's man-power scheme. Henderson declared in February that the industrial situation was graver than at any time during the war and that "the unyielding attitude of the Government is bringing the country on the verge of industrial revolution." A conference of "national representatives" from the engineering workshops was held in Manchester and decided that a strike should be declared on April 6 as a protest against the government's policy, but this action was later rescinded.

IV. CONCLUSION

On the basis of this information it is possible to come to some conclusion regarding the efficacy and desirability of introducing antistrike legislation as a means of establishing industrial peace during the war. Great Britain established two methods of dealing with strikes: the Defence of the Realm Act and the Munitions of War Acts of 1915, 1916, and 1917; the one of a criminal nature, the other providing for compulsory arbitration. The information available is not complete enough to show the exact number of cases in which the law was invoked to bring about a settlement or when it was successful in achieving this result. It is a fact, however, that strikes have increased proportionately since the passage of the Munitions of War Acts. It has already been stated that, although the time during which the Acts have operated is only 75 per cent of the total war period, 85 per cent of the total time lost by strikes throughout the war has occurred in this period. Less than one hundred of the most important strikes, practically all of which were in violation of the law, in which nearly one million men took part,

caused an aggregate loss of over 8,000,000 working days. The industries showing the greatest loss due to strikes are among the most vital war industries. The attitude of the government toward one of the strongest compulsory features is evidenced by the repeal of the leaving-certificate provision in October, 1917. Leading labor men of the Kingdom have expressed their dissatisfaction with the principle of compulsion during the war. Further developments have yet to show us which policy will ultimately prevail in Great Britain.

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NOTES

CERTIFICATES OF INDEBTEDNESS IN OUR WAR FINANCING

A notable feature of the present war financing of the United States has been the large part played by negotiable short-term debt obligations under the designation of "certificates of indebtedness." In outright volume the gross amount of such certificates thus far issued (June 1, 1918) has been greater than the principal sum of any two of the Liberty Loans and will soon exceed all three combined. Issued in short maturities, the actual amount of certificates at any time outstanding—now authorized to a maximum of \$8,000,000,000—has with a single brief exception (July 30–August 9, 1917) been considerable since our first entry into the war, and since August, 1917, has never been less, at the close of any month, than \$1,250,000,000, rising as high as \$3,936,339,500 (April 30, 1918), with an amount actually outstanding on May 31, 1918, of \$2,575,967,000.¹ The Treasury has made habitual use of such certificates to anticipate the yield of war loans and war taxes for national defense and Allies' credits and has prepared for continued reliance upon the same expedient. Finally, the certificates have been deemed capable of exerting important influence upon the money market and upon the price level, and the efforts of the Treasury, in harmony with the Federal Reserve Board, have been expended in guiding and shaping this influence to the general good. In another place² I have sought to analyze the direct fiscal results of the Treasury's policy in this connection as well as to trace its collateral effects upon the business world and upon social well-being. In the present connection it is proposed only to describe its external features.

From the preparatory measures taken before the actual declaration of hostilities up to the present time of writing the United States has

¹ Monthly "Financial Statement of the United States Government," formerly issued as "Statement of the Public Debt" (Division of Bookkeeping and Warrants, Treasury Department). No statements were issued for July, August, September, and October, 1917, and for these months the nominal aggregates of the outstanding issues have here been used.

² *War Borrowing: A Study of Treasury Certificates of Indebtedness of the United States*. In press.

emitted twenty-three formal issues of certificates of indebtedness, as shown in Table I.

TABLE I

Series*	Date of Issue	Interest Rate	Date of Maturity	Nominal Amount
[1].....	Mar. 31, 1917	2	June 29, 1917	\$ 50,000,000
[2].....	April 25, 1917	3	June 30, 1917	268,205,000
[3].....	May 10, 1917	3	July 17, 1917	200,000,000
[4].....	May 25, 1917	3½	July 30, 1917	200,000,000
[5].....	June 8, 1917	3½	July 30, 1917	200,000,000
[6].....	Aug. 9, 1917	3½	Nov. 15, 1917	300,000,000
[7].....	Aug. 28, 1917	3½	Nov. 30, 1917	250,000,000
[8].....	Sept. 17, 1917	3½	Dec. 15, 1917	300,000,000
[9].....	Sept. 26, 1917	4	Dec. 15, 1917	400,000,000
[10].....	Oct. 18, 1917	4	Nov. 22, 1917	385,197,000
[11].....	Oct. 24, 1917	4	Dec. 15, 1917	685,206,000
[12].....	Nov. 30, 1917	4	June 25, 1918	691,872,000
[13].....	Jan. 2, 1918	4	June 25, 1918	491,822,500
[14].....	Jan. 22, 1918	4	April 22, 1918	400,000,000
[15].....	Feb. 8, 1918	4	May 9, 1918	500,000,000
[16].....	Feb. 15, 1918	4	June 25, 1918	74,100,000
[17].....	Feb. 27, 1918	4½	May 28, 1918	500,000,000
[18].....	Mar. 15, 1918	4	June 25, 1918	110,962,000
[19].....	Mar. 20, 1918	4½	June 18, 1918	543,032,500
[20].....	April 10, 1918	4½	July 9, 1918	551,226,500
[21].....	April 15, 1918	4	June 25, 1918	71,880,000
[22].....	April 22, 1918	4½	July 18, 1918	517,826,500
[23].....	May 15, 1918	4	June 25, 1918	183,767,000

*The bracketed numerals are used merely to distinguish the issues in the present study. As a matter of fact "only a few of the issues had serial letters and numbers printed on the certificates, the other issues being without any serial designation." The issues in anticipation of the Fourth Liberty Loan have been conveniently designated as Series IV and the successive issues distinguished by serial letters.

In fiscal purpose the twenty-three series may be arranged in five groups, as shown in Table II.

TABLE II

Series	In Anticipation of	Nominal Amount
(A) [1].....	1917 income tax	\$ 50,000,000
(B) [2] [3] [4] [5].....	First Liberty Loan	868,205,000
(C) [6] [7] [8] [9] [10] [11].....	Second Liberty Loan	2,320,493,000
(D) [12] [13] [16] [18] [21] [23].....	1918 income and excess, profits taxes	1,624,403,500
(E) [14] [15] [17] [19] [20] [22].....	Third Liberty Loan	3,012,085,500

There have thus been emitted, in conjunction with our war financing, twenty-three issues of certificates of indebtedness to an aggregate amount of \$7,875,187,000. Of these the initial issue was nominally in anticipation of the proceeds of the 1917 income tax and six subsequent issues

were in anticipation of the proceeds of the 1918 income and excess-profits taxes, the latter group, however, partaking of important characteristics of the loan-anticipation issues. The remaining sixteen issues, of an aggregate amount of \$6,200,783,500, were emitted in anticipation, successively, of the proceeds of the First, Second, and Third Liberty Loans.

Such anticipatory borrowings have formed a large proportion of the nominal amounts of the Liberty Loans. The ratio of the nominal volume of certificates outstanding at the date upon which the first instalment on account of the loan was payable, to the amount of the loan has been approximately as shown in Table III.

TABLE III

Liberty Loan	Date of First Instalment	Amount of Loan	Certificates Outstanding	Ratio of Certificates to Loan
First.....	June 28, 1917	\$2,000,000,000	\$ 868,205,000	43.4
Second.....	Nov. 15, 1917	3,808,766,150	2,320,493,000	60.9
Third.....	May 4, 1918	4,170,019,650	2,612,085,500	62.6

In other words the Liberty Loans have been to an increasing extent required to discharge short-term indebtedness contracted, in anticipation of the flotation, by certificate borrowing.

The certificates have been taken and held in the main by the financial institutions of the country—national banks, state banks, and trust companies. The Federal Reserve banks, with whom was placed the entire ante-bellum issue of March 31, 1917, subsequently withdrew from the rôle of direct investors and confined themselves to the functions of distribution and remittance, with only such temporary investment service as was made necessary by administrative convenience, by the insufficiency of the banks' subscriptions, and by the desirability of aiding wider distribution of certificates among the banks.

Of the certificates acquired by the banks much the largest quota has been for their own account, only a minor part being apparently taken in behalf of customers. This applies to the loan-anticipation certificates; with respect to the tax-anticipation issues the conditions have probably been somewhat different. No precise tabulations are available as to the several amounts of the loan-anticipation certificates taken and held by investors. It is possible, however, to form some opinion as to this from the condition of the national banks on the several "call" dates; from the condition of "member banks in leading cities" reporting weekly after December 7, 1917, to the Federal Reserve Board; and from the condition of member banks other than national banks on December 31, 1917,

reported to the Federal Reserve Board. A somewhat involved and necessarily free computation made by the present writer from such data, elsewhere set forth in detail,¹ leads to the highly tentative conclusions that of the certificate issues prior to January 1, 1918, the banks took for their own account slightly less than seven-eighths; and that of the issues thereafter emitted up to April 19, 1918—when large amounts of tax-anticipation certificates had been sold “over the counter” and when progress had been made in securing a wider distribution and absorption of the loan-anticipation issues—the banks took something more than three-fifths.

In the absorption of the certificates for themselves and their customers the banks of the New York district have taken the leading part, and this tendency has continued with the progress of the Treasury's short-term borrowing. Of the \$868,205,000 certificates issued in anticipation of the First Liberty Loan, the banks of the New York district took \$459,962,000, or 53 per cent; and of the \$2,320,493,000, issued in anticipation of the Second Liberty Loan, \$1,467,543,000, or 63 per cent, was so taken. Of the final issue of this series—\$685,296,000 bearing date of October 24, 1917—the New York banks took no less than \$543,683,000, or 79 per cent, and even of the next succeeding issue—the first of the series of tax-anticipation issues, \$691,872,000, bearing date of November 30, 1917—no less than \$494,070,000, or 71 per cent, was so taken.

With the systematic efforts of the Treasury to establish a wide subscription basis for the certificate issues in anticipation of the Third Liberty Loan, the relative amounts allotted to the New York district became less. Of the \$3,012,085,500 so issued, only \$1,255,308,000, or 42 per cent, was taken by New York. It is, however, significant that with the later issues of the series the New York quota again tended to rise, although to nothing like the former maximum. The relative distribution of the six issues of certificates in anticipation of the Third Liberty Loan among the financial institutions of the Federal Reserve districts is shown in Table IV.

Within the New York district the essential rôle was of course played by the New York City banks with respect to the issues in anticipation of the Second Liberty Loan: “Of the 1,076 banks (not including savings banks) outside of New York City, 308 purchased certificates of indebtedness, but of these only about one-half were what may be termed

¹ “Holdings by the Banks of Treasury Certificates,” *Federal Reserve Bulletin* (September, 1918), H. 845-47.

regular purchasers. The others participated in only one or two of the issues."¹

TABLE IV

	January 22	February 8	February 27	March 20	April 10	April 22
Treasury		0.6	0.7	0.7	.....	0.3
Boston	5.0	5.8	7.1	9.8	7.2	7.0
New York	52.4	48.3	34.6	35.6	39.1	43.0
Philadelphia	5.6	5.0	6.6	6.9	6.8	6.7
Cleveland	6.5	6.8	8.9	8.9	8.3	7.5
Richmond	1.8	2.4	3.6	3.0	2.0	2.1
Atlanta	2.4	2.5	3.0	2.9	3.1	2.1
Chicago	7.6	8.5	11.8	11.8	11.9	12.2
St. Louis	4.5	4.0	5.1	4.2	3.8	4.9
Minneapolis	2.7	3.0	3.4	2.9	2.8	2.9
Kansas City	3.0	4.3	4.8	4.8	4.5	3.9
Dallas	3.3	2.8	3.8	2.7	3.0	2.5
San Francisco	5.3	5.0	6.7	5.7	7.1	4.5

To a small extent in the case of the certificates issued in anticipation of the First Liberty Loan and to a very considerable extent in the case of succeeding issues, payment for certificates was made by subscribing banks "by credit." Full data as to the relative importance of such credit payments are available to the writer only for the certificates taken by subscribing banks in the Federal Reserve District of Boston; but it is likely that the figures for the country at large are not notably different from those of this particular District.

The first phase of our war borrowing—the recurrent issue of loan-anticipation certificates of indebtedness—has thus resolved itself very largely into an extension to the Treasury of deposit credits, in the form of "government deposits," by and through financial institutions qualified as special depositaries. This tendency to create deposit currency as an incident of war borrowing rather than of business expansion has been further emphasized in the second phase of our funding policy—the periodic flotation of a Liberty Loan in anticipation of which the certificates of indebtedness were issued and the proceeds of which were designed to extinguish the certificates so issued on or before maturity. The simplest procedure, anticipated, it might be imagined, in the Treasury's program, would have been for the outstanding certificates to have been tendered by the banks in payment of the loan subscriptions, leaving the

¹ *Fourth Annual Report of the Federal Reserve Board*, p. 277. This relative non-participation of the banks outside of New York City underwent striking change with the systematic enlistment of the banking strength of the country in connection with the anticipatory borrowing of the Third and Fourth Liberty Loans. Thus of the 1,042 national banks, state banks, and trust companies in the New York Federal Reserve District, no less than 861 subscribed to the certificate issue of September 3, 1918.

banks upon the completion of the operation in possession of long-term bonds instead of short-term certificates. This, however, would in the opinion of the Treasury have defeated the ends desired—keeping the banking resources of the country in so far as possible liquid and securing the widest popular absorption of the bonds.

TABLE V

Issue of	Total Issued in Boston District*	Paid by Credit*	Percentage Paid by Credit
1917			
Mar. 29.....	\$ 3,000	.....	.....
April 25.....	13,800	.....	.....
May 1.....	2,000	.....	.....
May 10.....	12,167	\$ 5,450	.447
May 25.....	11,200	.....	.....
June 8.....	18,200	3,652	.200
Aug. 9.....	19,400	6,500	.335
Aug. 28.....	15,140	4,593	.303
Sept. 17.....	12,171	5,195	.426
Sept. 26.....	22,174	12,245	.552
Oct. 18.....	30,149	21,349	.708
Oct. 24.....	33,010	27,590	.835
Nov. 30.....	20,921	20,090	.960
1918			
Jan. 2.....	16,163	13,219	.817
Jan. 22.....	20,025	17,587	.878
Feb. 8.....	29,134	24,870	.853
Feb. 15.....	8,790	7,535	.857
Feb. 27.....	35,369	30,059	.849
Mar. 15.....	6,735	4,864	.722
Mar. 20.....	53,690	49,204	.917
April 10.....	39,731	36,084	.908
April 15.....	5,220	3,250	.622
April 22.....	36,468	27,143	.744

*000 omitted.

The actual procedure was for each loan flotation to take the form of an intensive popular campaign in which bonds were subscribed by individuals, through banks, and by banks on their own behalf, such subscriptions being forwarded to the Treasury through the Federal Reserve banks as the fiscal agents of the Treasury. In due course allotments were made by the Treasury through the Federal Reserve banks to the subscribing banks for the amounts taken in their own behalf and for their clients. Individual subscribers made payment for bonds through their banks by drawing upon existing deposit accounts, by creating new loans and deposit credits and drawing directly or indirectly thereon, and by tendering cash items—withdrawn (unless taken from hoards) from circulation, from savings or from other banks, but coming ultimately from the liquid resources of the banks—cash in vault in the first instance,

Federal Reserve notes obtained by rediscount thereafter. In turn, subscribing banks made payment, overpayment, or payment in full through the Federal Reserve banks for bonds allotted to them for themselves and for their customers by tender of certificates, by credit, or by cash items. These three modes of payment figured in the heavily overpaid first instalments of the three Liberty Loans in the proportions shown in Table VI.

TABLE VI

	First	Second	Third
Part of loan paid on first instalment.....	73	73	77
Composition of first instalment payment:			
Certificates.....	38	17	26
Credit.....	27	53	47
Cash.....	35	30	27

A small use of cash and certificates and a heavy use of credit in payment of bond subscriptions thus marked the successive Liberty Loan flotations. As to cash, payments were made by interior banks by drafts upon the reserve banks, and by the reserve banks by drafts upon their reserve balances with Federal Reserve banks, this resulting in turn in a heavy demand for discounts from member banks and through them for non-member banks for the restoration of depleted reserves. As to credit, the banks followed the procedure elsewhere described, creating in the special depositaries new or additional government deposits to the amounts paid in this manner. Over and above the two restraints operative in the case of credit payments for certificates—extent of qualification as government depositaries and capacity of banking resources to meet subsequent withdrawals of government deposits—a third limitation figured in the restrictions imposed by the Treasury as to the relative amount permitted of such credit payment.

Both relative to the total subscription payments and, more significantly, with respect to the aggregate volume of certificates at the time outstanding, certificates of indebtedness were used to a notably minor extent in the banks' payments for bond subscriptions. In the flotation of the First Liberty Loan, 64 per cent of the nominal volume of outstanding certificates was employed in the payments made on the first instalment date; but in the Second Liberty Loan only 20 per cent was so tendered, and in the Third Liberty Loan some 32 per cent was used.

Reasonable allowance having been made for certificates held by subscribing banks in excess of their subscriptions, for certificates held

by individuals, corporations, and non-subscribing banks for investment purposes, and for certificates used in later instalment payments, it still appears true that in effecting settlement for Liberty Loan subscriptions the banks of the country elected to make large use of "payment by credit" and to retain a substantial part of their certificate holdings as

TABLE VII

Liberty Loan	Loan-Anticipation Certificates Outstanding	Certificates Used in First Instalment Payment	Percentage
First.	\$ 868,205,000	\$554,500,000	64
Second.	2,320,495,000	469,000,000	20
Third.	2,612,085,500	823,332,600	32

short-term investments. Of direct fiscal importance, the collateral effects of such procedure in relation to the money market and the expansion of credit have been of even greater significance. But an analysis of these consequences lies beyond the scope of the present note.

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WASHINGTON NOTES

NEW FINANCIAL NEEDS

National financial requirements have again been increased by the presentation of a deficiency appropriation bill calling for more than \$8,000,000,000 for the use of the army and navy. This added to the \$24,000,000,000 already required by the previous program makes a total of some \$32,000,000,000, provision for which must be made during the current fiscal year. Out of this amount about four and a half billion dollars has already been obtained from the banks through preliminary sales of certificates of indebtedness. That amount must be reimbursed through the use of an equivalent amount drawn from the proceeds of the Fourth Liberty Loan. The proceeds of this loan are therefore practically used up, or will be so, before the work of getting in the actual results of subscriptions has been completed. Assuming that the war revenue bill when adopted will yield as much as \$9,000,000,000—a very high estimate of its return, unless a new program of taxation should be added to that which is now carried in the bill—it would be necessary to obtain from loans at least \$23,000,000,000 to meet the new requirements, of which the proceeds of the Fourth Liberty Loan would furnish say between \$6,000,000,000 and \$7,000,000,000. Cer-

tainly \$16,000,000,000 more must therefore be secured either by other Liberty Loans or by taxation not now contemplated in the war revenue bill, prior to June 30, 1919.

The experience during the Fourth Liberty Loan has apparently tended to demonstrate that the available fluid or surplus wealth of the country in the hands of the bond-buying classes has been considerably decreased, or that it has been held in reserve because of the expected taxation which must be met by the community out of this year's income, or by a combination of both factors. Whatever may be the precise assignment of responsibility, the fact remains that the classes to which appeal has most directly been made are showing a proportionately lower ability to subscribe for bonds. This has naturally thrown upon the banks the necessity of sustaining or underwriting an increasing share of the loan as currently placed. Should present methods of finance be adhered to, further developments in the same direction would mean that the government's obligations would be continuously shifted to the banks in one form or another. Prior to the Fourth Loan the banks were the actual buyers of only small quantities of government bonds, but for some time past there has been an increasing tendency on the part of individuals to obtain discounts at the banks with bonds as security, so that the holdings of war paper have been very considerably increased.

The results of the Fourth Loan will undoubtedly burden the banks still further because of the very long commitments which many of them have incurred by undertaking to carry the borrowers up to a year on the basis of successive renewals designed for the purpose of enabling them to settle their obligations gradually. Undoubtedly a considerable number of individuals have "overbought," that is to say, have subscribed for quantities of bonds which cannot be paid for between the present date and the time when the next Liberty Loan will necessarily have to be offered in order to get the funds needed by the government. Such persons will necessarily be less active bond buyers in any subsequent loan campaign. The outcome of the Fourth Loan, therefore, not only indicates a greater reliance upon credit institutions and a less relative reliance upon saving, but also a considerable tendency to anticipate the future and to reduce the relative bond-subscribing capacity of the general mass of individuals. Two alternatives to continuing in the present policy are under current consideration—the one the extension of taxation to the lower grades of incomes, the other the adoption of some plan for more or less compulsory assignment of subscription quotas to individuals, either through the banks or otherwise.

A SUBSIDY TO GOLD

During the past month important developments have occurred in connection with a plan for altering the status of gold as a standard of value. For some time past the Federal Reserve Board has received from many quarters urgent applications for assistance in securing a form of governmental assistance to, or relief of, the gold-mining industry. It has been asserted that gold-mining is tending to decline in volume and that this condition is an outgrowth of the war situation, due to the fact that the cost of labor, materials, chemicals, and all essentials have greatly risen. The matter became acute some months ago when gold miners first applied to the Board and to the Treasury Department for recognition of their business as a "war industry." Later, application of the same kind was made to the War Industries Board, with the result that gold-mining has now been given a preferred status with regard to fuel, transportation, etc., thus placing it definitely in the position of a war industry. Meanwhile, mining representatives have brought to the attention of the Senate Finance Committee arguments in favor of exempting the business from taxation or of giving it at least a preferred status in that respect as well. The situation has appealed so strongly to some banking interests that they have indorsed a plan for obtaining an international agreement designed to bring about a higher price for gold in order that the production of the metal may be stimulated.

In effect the argument put forward on behalf of the scheme is that, due to the very greatly inflated credit systems of all countries, it is now practically essential to sustain them by providing a stronger gold base on which they may rest in order that the "inflation" which has resulted from the war may be decreased or terminated at the earliest possible moment. Economists especially interested in questions of money and prices have almost uniformly thus far taken the view that any such measure would be equivalent to a deterioration of the standard of value and that it must accordingly be classed as a renewal or revival of the former 16 to 1 "heresy." At the basis of the current discussion in congressional circles lies the assumption that the quantity of bank credit that can be granted by a country is fundamentally determined by the amount of gold that can be held in reserves; and that, if these reserves are larger, the credit-granting powers of the banks will be correspondingly expanded. In support of this view is cited the fact that ever since the opening of the war there has been a determined effort on the part of practically all belligerents to obtain and hold as much gold as possible, this on the ground that such gold was necessary in order to sustain the

structure of their banking credit. The view that the relation of gold to goods through prices is automatically determined on the basis of demand and supply and that any interference with this relationship tends to destroy the idea of a stable standard of value is practically discarded by those who advocate the theory of the increase of gold as necessary to the maintenance of solvent banking and industrial conditions. Prospects now, however, seem to favor at least the holding of an international conference, relative to the treatment of gold and credit, either incident to, or immediately after, the peace conference—whenever the latter may occur.

AMENDMENTS TO THE FEDERAL RESERVE ACT

The adoption of amendments to the Federal Reserve Act in a measure approved by the President on September 26, 1918, practically brings to a close, at least so far as important changes are concerned, the process of modifying and developing the Federal Reserve Act which has been in progress for the past four years. So unexpected have been the demands upon the reserve system and so unusual the conditions which it had to meet, that the underlying legislation has almost unavoidably been altered from time to time with comparatively little discussion, for the purpose of enabling the banking system to bear its part with success in carrying the country through the present period of difficulty. It may well be that after the return of peace the further modification of the act with a view to correcting and improving some of the innovations and changes hurriedly made in its structure under the stress of events will be undertaken. In the meantime, however, the Federal Reserve Board has announced its intent for the present to press no further recommendations for change.

The act of September 26 contains three important alterations as well as some minor ones. Of these three the first is a change in the method of electing directors of reserve banks. The old plan heretofore in vogue has proved itself unsatisfactory because of the faulty or defective grouping of the banks upon a rigid system uniform in all districts. To the Board itself is now given the power to group the member banks for the purpose of electing directors, this function being exercised for the first time during the current autumn. A second significant innovation carried by the new law lies in the modification of section 22 of the Federal Reserve Act so as to give a more reasonable interpretation of the restrictions upon directors in their relationships with the banks of whose boards they are members. The third feature, which by some will be considered the most important, provides for the

broadening of the power of the Federal Reserve Board to grant the national banks fiduciary powers. The Board is now allowed to make such grants whenever the laws of a state permit the exercise of such fiduciary powers by state banks or trust companies. This is in substance pursuant to the decision of the Supreme Court of the United States in the so-called Michigan case, the opinion which recognized the right of the Federal Reserve Board to make fiduciary grants under the act as originally provided and intended by Congress.

Among the minor changes made by the new bill is the readjustment of the denominations of currency which may be issued by Federal Reserve banks and the establishment of a criminal penalty for violations of the act or offenses committed under it—a point overlooked both in the original enactment and in the legislation which has followed and amended it. On the whole the changes conveyed by the measure of September 26, here under review, are desirable and beneficial, and their tendency will be to render the working of the act smoother and more certain.

Although the amendatory provisions had been under consideration in Congress for a great while prior to their final adoption, the opposition to them eventually disappeared, owing in some measure to a better understanding on the part of state banks of the exact significance of the changes made by the proposed legislation. An association of state institutions designed for the purpose of opposing the Federal Reserve System which had apparently been called into existence by the pendency of this legislation has thus far had no apparent influence.

CHANGES IN BANK INVESTMENT

One of the principal effects produced by the war on banking is proving to be that of a general alteration in the scope and character of bank investments. This tendency has become very much more marked during the past few months than it was prior to that time. The change is primarily due of course to the gross increase in the demands of the government for means with which to carry on the war, but there is also a group of incidental factors that is of very considerable importance. Many banks which have in the past had considerable amounts of funds available for use as a kind of secondary reserve, and have been in the habit of putting them into commercial paper, acceptances, and similar investment forms have now drifted into the practice of employing these funds in the purchase of Treasury certificates of indebtedness which pay about as well as other forms of available paper. To a very considerable extent they have of course been obliged to invest their funds in this way

as a result of Treasury requirements, but many banks have gone farther and have voluntarily purchased the certificates as a means of income. To this extent they have lowered the amount which they can put into commercial paper. One effect of this change of policy on their part has been that of reducing the scope and activity of the acceptance market.

The situation in this regard has been recognized during the past summer by the adoption in various quarters of a practice of lending at call against acceptances, the intention being to enable commercial paper brokers to purchase more freely by assisting them to get their funds out of the acceptances which they are carrying at any given time. This expedient, however, has not had more than a very limited success thus far, although under other conditions in the money market it may produce better results.

Another change in the portfolio of the banks is found in the fact that they are carrying so great an amount of what is called "war loan" paper consisting of the notes of their customers secured by bonds and certificates of indebtedness. The great increase of this type of paper is strikingly seen at the Federal Reserve banks, where its growth has assumed very large proportions. Much of it is, however, held by the member banks the country over. This paper is in a great many cases necessarily renewed from time to time, and in so far as it is thus renewed it constitutes a permanent tying up of the resources of the banks in what is practically a long-term investment. This constitutes a diminution in the "liquidity" of the various institutions.

The great increase in currency which has been frequently noted, the most striking element in which is an increase of about \$2,300,000,000 in Federal Reserve notes from the opening of the Federal Reserve banks to the close of September, 1918, has been overstressed, since the establishment of a net figure (by deducting the gold and gold certificates which have been drawn into bank vaults) shows a much smaller increase, amounting to not much over \$600,000,000. This great increase in currency has been paralleled by a much greater increase in bank deposits, those of the national banks alone rising from about \$8,000,000,000 at the opening of the war to about \$14,000,000,000 in June, 1918. The increase in currency is of even less importance as compared with the increase in bank deposits than it appears to be on the face of things, due to the fact that in the industrial sections of the country where wages have been high and prosperity great the practice of hoarding notes has enormously increased. This of course withdraws a very considerable amount of notes from actual circulation and to that extent deprives them of the effect which they would otherwise have produced.

BOOK REVIEWS AND NOTICES

Organized Banking. By EUGENE E. AGGER. New York: Henry Holt & Co., 1918. Pp. ix+385.

Present-day books on banking, intended like the work in question "for the student and general reader," are inclined to err on the side of excessive details of banking practice. The author of *Organized Banking* is determined that such a charge shall not be laid at his door. Starting with Professor Dunbar's *Theory and History of Banking* as his "basic structure" he confines himself largely to a discussion of abstract principles until the final chapters describing European and American banking are reached. He advises his readers who feel the need of "illustrative, concrete material" to resort to a "good book of readings like W. Hamilton's [obviously a slip for 'C. A. Phillips'] *Readings in Money and Banking*, or H. G. Moulton's *Principles of Money and Banking*."

On the whole the author has developed in a very creditable fashion the theories which underlie our present financial structure. He seems to proceed, however, on the assumption that his readers are conversant with the details of modern banking systems. The reviewer has serious doubts as to whether the average "student and general reader" possess such knowledge.

The first pages of the theoretical discussion are given over to a brief review of the modern productive system and the service rendered in it by banking institutions through the provision of the necessary funds. The author in connection with his discussion of the functions of savings, investment, and commercial institutions takes a much broader view of banking than is afforded by the time-honored aspect of the financing of merchandising. However, he straightway dismisses all but commercial banking operations from the realm of *Organized Banking*. One cannot study the activities of the modern department store of finance, whether it be called a bank or trust company, without being impressed with the fact that organized banking today, while still centered around the task of providing a spendable medium of exchange, does not confine itself to financing commercial operations. In one department this spendable medium is used in floating a new issue of securities; in another, for the purchase of mortgages; and in another, for speculation in securities.

Each of these groups of operations, as Professor Agger himself points out, is guided by its separate set of principles, differing from those he has laid down for the commercial banking activities but forming just as legitimate a part of what purports to be a discussion of organized banking as the term is understood today.

The first and third chapters are given over to a discussion of the general operations and the functions of a commercial bank. The second chapter brings out the familiar contrast between the bank note and the deposit. It contains some quite extensive digressions on the nature and functions of the loans, investments, and reserves of commercial institutions. Chapters iv and v take up the thread of the note-deposit discussion and set forth the principles governing the expansion and contraction of bank credit.

The chapters in which the principle of reciprocity of indebtedness is shown to apply to the workings first of domestic and then of foreign business transactions are much more readable inasmuch as the author here lapses from his quite strict adherence to pure theoretical analysis and fits his discussion into the real situation.

The thesis of the next two chapters is that the maintenance of a mobile and elastic credit structure depends on a proper mobilization and control of the reserves and the existence of a broad discount market. Then follows the concluding chapter of the theoretical discussion in which is outlined the type of banking system which is calculated to give the results pictured in the foregoing chapters as highly desirable.

The rest of the book is in decided contrast with what has gone before. Adherence to abstract discussion gives way completely to detailed description. The first of this group of chapters recites the most important features of the English, French, and German systems with a view "to learn by what means in practice they realize the desired ends." Here is furnished information which the unsophisticated reader could well acquire before reading the earlier chapters. No attempt is made to analyze these systems in the light of foregoing theories. Canada, in spite of frequent earlier allusions to her banking system, is omitted from this comparative survey.

The present system of the United States is described in three final chapters. The first of these, a résumé of banking before the enactment of the Federal Reserve Act, including an exposition of the National Monetary Commission's list of ills, is followed by a chapter giving an excellent summary of the act. In fact, the latter is so complete as to make almost superfluous the printing in the Appendix of its

exact text, together with the verbatim regulations and interpretations issued from time to time by the Federal Reserve Board. The final chapter describes the actual organization of the system and gives some interesting details of its operation down to June, 1917. In this case, as in that of the foreign banking systems, the reader is left to make his own application of the principles previously set forth.

G. W. DOWRIE

UNIVERSITY OF MINNESOTA

Readings in the Economics of War. Edited by J. MAURICE CLARK, WALTON H. HAMILTON, and HAROLD G. MÓULTON. Chicago: The University of Chicago Press, 1918. Pp. xxxi+676. \$3.00.

Many of the books on the war are merely of ephemeral interest, but this volume is quite certain to be one which will last. The general attitude of the editors is thus stated: "This book is the expression, not merely of the economic side of the war, taken as a detached event, but rather of the part the war plays in the evolution of our economic institutions." Their idea of the functions of the book is as follows:

It is hoped that the book will meet three uses: First, it should be of value in connection with courses in the economics of war, whether such courses be designed as part of the training of the Student Army Training Corps or to give an appreciation to other students of the larger economic issues related to the war; second, it should do much to make the introductory course in economics of real significance in understanding the changing world in which we live; third, it should prove of interest to the general reader who is interested in the economic background of war, the economic basis of military efficiency, and the economic problems that will follow in the wake of the war.

Some idea of the scope of the volume may be obtained from a brief survey of the subjects treated. Under the economic background of war are considered: the nation as an economic unit, the pressure of population, economic imperialism, and commercial rivalry and special interests. An attempt is made to analyze the function of the nation in economic affairs and to show how the discriminatory policies of nations lead to war. The chapter on war as a business venture treats of the negative side, the profit side, and human attitudes, rational or otherwise. The editors seek to show what persons may gain from war and what various things, by no means all economic, may be considered as gains. The nature of modern warfare includes war under modern industrial conditions, the relation of science and industry to war, and the larger

economic strategy. This chapter emphasizes the importance of the machine technique and sets forth the problem of utilizing our productive energy to get the best military results. The problem of industrial mobilization is treated from the standpoint of its nature, methods, and the lessons from European experience. Industrial mobilization is shown to be of equal importance with military mobilization. Some attempt is made to explain our slowness in realizing what adjustments were needed. The obstacles to rapid mobilization in democratic countries are found in individualism and the lack of flexibility in the governmental machinery. We should take some comfort in the editors' cautious conclusion: "... given time, liberal states can cope reasonably well with autocracy." Our failure to get quantity production of ordnance and aeroplanes quickly is traced to our insistence that they be made on models of American design. One reading gives the steps and delays incident to developing the machinery for the administration of labor policies in the United States. The chapter on war-time regulations of trade and industry recounts the dislocations in trade and international exchange and the regulations for controlling trade in Great Britain and the United States. The discussion of food and fuel treats of the problem of dealing with these supplies in the face of scarcity, showing the administrative difficulties in the regulation of production and the control of consumption. The chapter on transportation outlines the railroad problem in the United States and Great Britain and shows the steps taken to solve it by governmental control. To this is added an account of the governmental control of the express companies and a discussion of the shipping problem. The war finance chapter presents both sides of many moot questions, such as whether the cost of the war can be postponed, whether bonds or taxes should be used to finance the war, the inflation question, and whether we should save or spend. It also gives an account of the War Finance Corporation. Prices and price control are treated by giving some facts about the rise in prices and some explanation of the rise followed by the arguments for and against price control and some account of the American experience in the control of prices. Many interesting documents are collected to show the attitude of labor toward the war, the problem of mobilizing labor, and how labor conditions and policies have been affected by the war. The costs of the war in men, money, and social effects are outlined; and on the other side are shown some war lessons in the principles of national efficiency. The last two chapters deal specifically with conditions after the war, while in many of the former chapters there are implicit in the discussion

points or principles which have bearings on after-war problems. Among the economic factors in an enduring peace are noted the control of raw materials, foreign markets, and territorial problems. Lastly the problems of reconstruction, demobilization, and social reform are considered.

The book consists of about two hundred and fifty selections, all of them timely but not trivial nor temporary in their interest. The editors have shown surpassing ability to get valuable readings from unusual sources, bringing together much important material not to be found in the usual library. Some maps, charts, and statistical tables are included. People interested in particular problems may object to the distribution of emphasis, but in general the editors have held to rather good proportion in assigning space to the various topics.

The division into chapters is not always happy. The chapter on war-time regulation of trade and industry is followed by a discussion of government control of food, fuel, transportation, and prices, which might easily have been included in the previous chapter. Again "cost-plus" and other interesting forms of contract are treated under price control.

Each chapter has an interpretative introduction. These are especially well done. A good balance is maintained between stating what the various selections show, raising important issues for consideration, and indicating the wider bearings of the subject. Then within the chapters are "editorials" in which the editors discuss phases of topics that have not been adequately presented by the readings. Many of these editorials are extremely valuable. In a number of cases "editors' notes" explain something about the author of the selection, as for example the finely humorous statement "General von Bernhardt (1849—) is an authority on cavalry tactics. . . ." There are helpful cross-references, and both an author and a subject index.

The reading of the book gives the conviction that the work was worth doing and that it has been well done.

JAMES D. MAGEE

UNIVERSITY OF CINCINNATI

War Time Control of Industry. The Experience of England. By HOWARD L. GRAY. New York: Macmillan Co., 1918. Pp. xv+304.

In this book Professor Gray has presented a straightforward and readable account of the experience of England in organizing her economic resources for war. Part of the material was collected for the Commercial

Economy Board of the Council of National Defense, and is here made accessible to the general public. As befits a good historian, Professor Gray divides his subject into periods and distinguishes three phases through which British control of industry has passed. First came ten months of tentative action (during which, however, the railroads were taken over). Then followed nearly a year and a half of determined regulation in which shipping and the output of munitions and army supplies took the most prominent place. Finally, beginning with the concluding months of 1916, England has entered upon a period of still more general and stringent control, centering around the production and distribution of the necessities of life. In this period the nation was put on rations and the cheap loaf subsidized. Still true to the historical principle, the author arranges his chapters in the general order in which the various branches of industry were taken under government control. Thus he successively takes up the railways, munitions and labor, the coal mines, wool and woolens, hides and leather, shipping, food, and agriculture. In the introduction and in the concluding chapter we find his general interpretation of the situation as a whole.


The book shows very clearly the steps by which a naturally individualistic nation has been led from one measure to another of constantly increasing control. England's dependence on imported supplies has apparently played a large part in this, making it essential that the government have absolute assurance of adequate supplies. The control of the prices of essential materials like wool and leather has led to government purchase of available supplies and to a government monopoly, or near-monopoly, of dealings in these commodities. On the heels of this comes strict control of profits and production wherever any such materials are released by the government for private use. The reasons for the subsidized loaf and the adoption of a rationing policy are well set forth.

In the concluding chapter Professor Gray compares British and American experience, holding that Great Britain is traditionally more attached to a policy of *laissez faire* than is the United States, but that her situation placed her under a more compelling pressure to adopt a policy of control. In viewing England as a supremely *laissez faire* country, the author appears to underemphasize such matters as the strength of the co-operative movement and of the Labor Party with its semi-socialistic character, municipal socialism, agrarian reforms for Ireland, old-age pensions, and the Lloyd George budget. Taking one thing with another, the reviewer is inclined to say that Great Britain before the war was farther from *laissez faire* than was the United States; however,

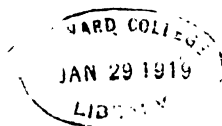
the point is not vital to the argument of the book. The author finds that this country has acted more promptly than Great Britain, without having as yet (in the autumn of 1917) developed such a thoroughgoing system of control. Shipbuilding is an exception, due to the circumstances of the case, for we had to create an industry anew, while Great Britain had private establishments capable of handling the work. On the other hand, we have not as yet taken over the coal mines, a measure to which England was forced through her failure to prevent strikes under private management. When Professor Gray wrote, general policies of rationing both consumers and producers had not made their appearance in this country, but they are rapidly being developed. However, not even scientific curiosity can make one hope to see the experiment carried out to the end, and to know just how long the war will have to last in order to bring us to the same severity of rationing systems that have been forced upon other nations.

Professor Gray's book pays the penalty of any work brought out in the midst of the process it is describing. But in spite of its avowed incompleteness, it furnishes a very valuable description of a series of emergency measures which cannot fail to have some permanent effect on national policy, even though the emergency should be over before these words are read.

J. M. CLARK

 UNIVERSITY OF CHICAGO

Volume XXVI



Title page
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The war is over.
Postmaster General

Number 10

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The Problem of Demobilization	921
Production After the War	<i>H. Gordon Hayes</i> 941
The Taxable Income of the United States	<i>David Friday</i> 952
Notes	970
International Trade Policy and the Coming of Peace	<i>Myron W. Watkins</i> 970
Washington Notes:	972
Demobilizing Industry—Question of Government Ownership—Cost of the War—The Banking Situation—Prices and the Gold Standard	
Book Reviews and Notices	981

COMMONS and ASSOCIATES' *History of Labor in the United States* (Frank T. Carlton), 981.—
COPELAND'S *Business Statistics* (Charles A. Dice), 984.—SECRIST'S *An Introduction to Statistical Methods* (F. H. Knight), 986.—FLORENCE'S *Use of Factory Statistics in the Investigation of Industrial Fatigue. A Manual for Field Research*, 987.

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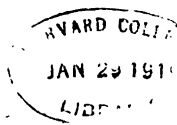
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THE PROBLEM OF DEMOBILIZATION

I. INTRODUCTION

The most immediate of the problems which the coming of peace brings is demobilization. If it involved only the discharge of men from the army and the cancellation of government contracts, its solution would be simple enough. But these tasks bring events in their wake, and these events lead to more remote consequences. In fact, since modern warfare involves the whole industrial system, these are but aspects of a comprehensive process of economic organization. The men discharged are to be re-employed; equipment is to be made to serve new needs; and plants are to be converted to new uses. These physical readjustments involve the re-establishment of the organization of trade and industry, the revision of industrial relations between employers and employees, and the reconsideration of the whole scheme of authority and control in the industrial system.

It is manifest that not even a pretentious volume, much less a single article, can follow the ramifications of this problem to its utmost limits. The discussion which follows is limited to a single aspect of the larger issue, namely, that of the transfer of "man power" from emergency to ordinary uses. This implies no disregard of the importance of plant conversion, changes in markets,

the revision of financial arrangements, and like matters. But, to keep the matter within limits, such questions, despite their importance, are formally put to one side. They are recognized in the pages that follow only when they bear very immediately upon the problem of the occupational redistribution of men.

It seems unnecessary to dwell upon the importance of an adequate handling of demobilization. It is enough to say that if the flow of labor back to ordinary occupations be kept in hand, we may avoid a glut of the labor market and the consequences which follow from it. On the contrary, if the process of redistributing labor once gets beyond control, the labor market will be glutted; a large volume of unemployment will result; labor standards painfully built up through many years of peace or under the stress of war will be swept aside; wages in many trades will fall seriously; the purchasing power of the groups which furnish the most stable demand for commodities will be crippled; anticipated profits, which furnish the motive for business enterprise, will be encroached upon; and there will come at least a possibility of a serious industrial depression. That the last event can come without a tendency to "bolshevism" few competent students of the situation believe.

It is the purpose of the discussion which follows to analyze the larger problems of the redistribution of "man power" with the smaller ones which make it up, and to enumerate the contingencies upon which these questions hinge. These contingencies involve matters of factual investigation and matters of undetermined or unannounced policy. Out of such an analysis of the problem, translated into terms of quantity and definite decision, a program for demobilization must spring. It must be premised upon a knowledge of the military forces to be demobilized and the war workers to be involuntarily discharged. It must be carried through by means of a series of administrative decisions based upon constantly changing facts. Its precise terms must await decisions upon many questions of policy. The factual investigations which underlie such a program and the uncertainties in policy by which it is conditioned must be set forth at some length.

In brief, the problem of demobilization involves getting men out of the army and war industry and into ordinary employment. It

cannot be solved as it was in this country at the end of the Civil War and as England so disastrously tried to solve it at the end of the Boer War, by the simple discharge of men from military service and the immediate cancellation of war contracts. Demobilization must be in terms of industrial needs rather than by military units; the nation must be able to furnish employment to men as rapidly as they are mustered out; and discharge from war work must be correlated with civilian re-employment in order to leave to former soldiers and war workers no ugly intervals of idleness and dependency. Within this larger question lie three problems which require specific mention.

1. The first is the problem of the rate of demobilization. It is to establish an equality between the rate at which the army is demobilized and war workers are involuntarily discharged, and the rate at which they can be reabsorbed into industry.

2. The second is the problem of personnel. It is to fit men of varied talents and attainments into positions making varied demands upon them.

3. The third is the problem of mechanism. It is to establish an organization and perfect devices by means of which men and positions may be brought together with dispatch and without waste.

II. THE PROBLEM OF RATE

The problem of rate, as the work implies, concerns the rapidity with which demobilization is effected. How speedily the whole process moves is, perhaps, an affair of no great moment, except as it involves losses in human and material resources through delay in getting them back into ordinary uses. It is much more important that the two principal movements, flow into the labor market and re-employment, should go on at the same rate. To determine what conscious control of these rates is possible we must separate each into its elements and enumerate the contingencies upon which it depends.

1. *The rate of flow into the labor market.*—The flow of labor into the market for employment will, during the demobilization period, be made up of five principal streams. These are: (a) demobilized men now under arms abroad; (b) demobilized men now under

arms in the United States; (c) workers involuntarily discharged from munitions industries; (d) immigrants; and (e) young people coming upon the labor market for the first time. The rate at which each of these streams comes into the market is more or less subject to control. Since the governing factors vary from group to group, each of these rates will have to be discussed separately.

- a) The rate of release of men under arms abroad: The rate of release of men under arms abroad depends upon a combination of military and industrial considerations. Of these the most important are military expediency and shipping.

Military expediency is of importance both for determining the time at which demobilization is to begin and for affecting its rate. Men cannot be released so long as the military situation requires their presence under arms; and, when release begins, they can be spared only as the passing of military necessity dictates. Since actual hostilities against an armed enemy are over, the first check upon the rate of release lies in the terms of the armistice which requires the presence for some months of large forces upon the frontier. A second check lies in the necessity of using men for police purposes even after peace in what were recently the Central Empires, in Russia, and in the Balkans. Circumstances now seem to indicate both that this necessity will exist for months or even years and that the work will fall in considerable part to American troops. Incidentally it may be added that military expediency is the limiting factor in the rate of discharge of men under arms abroad only in the event that, or at the times when, men are released less rapidly than available shipping can bring them home. The program for demobilization requires a constantly revised estimate of anticipated military needs abroad.

It is more likely that shipping will prove to be the limiting factor in the release of over-seas men. The rate at which they can be returned can be ascertained only by estimating the tonnage available for transport service during the period of need. This inquiry resolves itself more specifically into the following matters of fact and policy.

The amount of American shipping at the end of the war must be determined. A reasonably accurate anticipation of this at any

future time may be had in terms of prospective building. An estimate must be made of the real increase in transport facilities which can now be effected through a reorganization of shipping. This will include the addition of vessels now used for transport purposes and of cargo ships converted into transports. It will also include gains in tonnage from the discontinuance of circuitous routing and from a separation in the direction of the movement of supplies and men, both of which during the war went in the same direction. Lastly, the amount of shipping available for transport as against trade purposes must be determined. Strong pressure from commercial and shipping men will be used (as it has been during the war) to devote a large part of our merchant marine to capturing trade. In particular, commercial drives will be made upon South America and against Japan in the Orient. On the other hand, the sentiment of the American people will undoubtedly demand a speedy return of the soldiers. This presents a pretty clash over policy between trade and sentiment, and one that requires reduction to precise terms.

The availability of foreign ships for the transport of American soldiers is still undetermined. We relied heavily upon British and neutral tonnage to get our soldiers to France; but it is not certain that they can now be relied upon to get them back. Britain will be under obligations to give preference to the troops of her own colonies. In addition, there will be an insistent mercantilist demand for immediate use of her ships in foreign trade. Whether German vessels, now tied up in her own and neutral ports, will be available is still undecided. A chance to use them may come from their confiscation, from accepting their use as part payment of an indemnity to the Allies, or from an understanding with the successors of our erstwhile enemy. These uncertainties involve so large a percentage of possible tonnage as seriously to affect the rate at which soldiers can be brought home.

The assumption above has been that men are to be mustered out of service as rapidly as the military situation and transportation facilities permit. American sentiment demands the return of husbands and sons with the utmost dispatch. The belief is universal that if they are returned faster than they can be absorbed

into industry it is better to stimulate employment than to retard demobilization. But the possibility of equalizing employment with discharge by checking the rate at which men are mustered out of service is an alternative that must be considered. If it becomes an actuality, shipping ceases to be the limiting factor in the problem. Such a retarded discharge may be the result of conscious policy or it may come about by accident.

If it is decided to demobilize the over-seas men at a rate slower than transport facilities warrant, the movement may be retarded either in Europe or over here. If the delay occurs abroad, soldiers will probably be formed into new units for the industrial reconstruction of Europe or large numbers of them may be given vocational education. These uses are contingent upon understandings with the nations within whose boundaries the work is to be done and upon the formulation of an educational program for the emergency by the government at Washington. It is possible that a combination program of work and study may be undertaken, on the plan of "learning by doing." If the delay occurs in America, as is more probable, the men will be utilized upon public works or taken to cantonments and kept under military control without work. In this event they will be discharged gradually as the increase in the volume of production gives assurance of employment. This, however, raises the query whether the resumption of industry cannot be hastened, to the end that the interval between arrival in this country and discharge from the army be eliminated.

In passing it is worthy of note that unless care be taken, accident may make the rate of discharge slower than transportation facilities allow. Even if our soldiers are returned as fast as possible, there will still be left in France a considerable number who are not needed for military purposes. To avoid the waste of man power they may well be used in reconstruction work. But unless careful attention is given to transport facilities before entering into agreements with France, Belgium, or Russia, the obligations of our government may involve holding men abroad after facilities are available for their return home. Again, there is a chance that the extent of our own public works may hold military units beyond the time when men could find more permanent employment in the expanding industrial

system. In either case the rate of discharge is unintentionally arrested.

b) The rate of release of men under arms here: The rate of release of men under arms in the United States is, perhaps more than any of the other rates, subject to control. It may be decided to speed discharge or to delay discharge according to the amount of available employment. But in view of the popular sentiment demanding a return of kindred, and of political pressure to reduce the national budget with the utmost dispatch, it is doubtful whether discharge of these men can be long delayed. In addition it seems much wiser, as a matter of public policy, if the men cannot be reabsorbed into industry, to utilize their labor effort upon public work of permanent value than to allow it to go to waste. An alternative that will doubtless be considered is training them and sending them overseas to take the place of men longest in service abroad. If transport is the limiting factor in the discharge of the army abroad, such a plan merely accentuates the problem. But if military need controls demobilization, men going abroad make possible a more rapid discharge of the army in Europe. In this event the question ceases to affect the rate of demobilization and becomes one of personnel.

c) The rate of release of war workers: The most troublesome factor in the problem is the rate of release of workers in war industries. The rate of discharge of soldiers is subject to the direct control of a single authority, that of war workers to many. Public opinion, too, is much more concerned with finding positions for returning soldiers than with avoiding the unemployment of men and women at present engaged in industries with a frail hold on life. In addition it is by no means improbable that to those discharged from war industries must be added a host from non-war industries where places have been given to soldiers. Thus one employment problem, instead of being solved, may be translated into another. It is more likely that, because of imperfect control, the war workers will be turned loose to flood the market and that, later, soldiers will be discharged into a market already glutted with surplus labor. Even before the armistice was signed many laborers were discounting discharge by returning to non-war employment.

The change can be avoided and the rate can be controlled only by the establishment of a central agency for the clearance of all contracts and a policy for their gradual cancellation. Even at best this will provide a very uncertain check upon the rate of flow of ex-war workers into the labor market.

d) The rate of immigration: The rate of immigration is subject to control both by conscious decision and by the physical fact of shipping. If we choose we may prohibit all immigration so long as there appears to be danger of an oversupply of labor. Or, instead, we may prohibit the coming of certain types of immigrants most likely to interfere with employment here. In fact, the present law imposes serious handicaps upon the entrance of unskilled labor into this country. In addition it is more than possible that many European countries will impose restrictions upon emigration, despite the desires of many people of the war-ridden countries to come to America. If the discharge of men overseas were to start at once the limited supply of shipping would prove an effective check upon immigration until the army is demobilized. If it is to be delayed for some months, despite the poverty of Europe, there is a prospective flood of immigrants to be faced and an immigration policy to be framed.

e) The rate of entrance of new labor into industry: In addition to the groups mentioned the stream of young men and women seeking employment for the first time will flow on as usual during the demobilization period. The shorter the period of demobilization the fewer of them there will be to be reckoned with. But while their numbers add to the seriousness of the problem, it does not follow that demobilization should be effected slowly merely in order to prevent the problem from being complicated by large numbers of the industrially uninitiated.

Together these factors determine the rate at which workers are to flow into the labor market. Together they determine the rate at which employment must be found for them. Some of the considerations mentioned above can be reduced to definite statement by securing facts more or less accessible. Others depend upon future policy which can be anticipated with fair precision. Still others rest upon events and judgments still too uncertain for any-

thing more than a guess. While such uncertainties prevent an accurate statement of the rate of discharge, it is obvious that the wider the range of information and the more accurate its character, the more fearlessly and intelligently can the problem of controlling the rate of discharge from the army be met.

2. *The rate of absorption into industry.*—The rate at which industry can be made to absorb returning soldiers depends upon considerations fully as uncertain as those mentioned above. It is tied up with a reorganization of an economic system to meet the needs of peace. It has all the uncertainties which accompany a process subject to conscious human control. This rate depends upon the following considerations.

a) The physical capacity of industry: The opinion is quite general that within a comparatively short period the industrial system can easily absorb all of the demobilized soldiers and all discharged war workers. If the "plant capacity" of the country were the only factor determining employment this judgment would probably be correct. But since the industrial system is a highly complex and delicate one many other factors affect employment. Plant capacity at best determines the maximum limit of available employment. The "physical productive capacity of the country" includes farms, mineral resources, factories, commerce and professional and personal service. In each of these cases there is a limit upon the number of men which can be used. Farms might take very large numbers, providing laborers were willing to take the progressively smaller returns which come from intensive cultivation, but an effective check upon agriculture's power of absorption is the unfitness of the great mass of soldiers for farm life. The resources of mines are indefinite, but the fact of limited equipment restricts their demand for labor. While "plant capacity" in manufacturing now runs far larger than ever before, its accommodations for labor are limited by the uselessness of much of it for peace-time production. Likewise commerce, the professions, personal service, and what not are effectively limited in the number of laborers which they can absorb.

b) The organization of the industrial system: The amount of employment inherent in the plant capacity of the country can give

at best only the maximum demand for labor. It by no means follows that this volume will be immediately available or that it will open fast enough to accommodate all who enter the labor market. This maximum can be obtained only if the system is so well organized that all the productive capacity is fully utilized. If business lags, if the "rhythm" of activity is manifest in a period of "low" output following the "peak" of war-time production, if a depression comes, the demand for labor will be far smaller than this calculation shows. It may fall even to the vanishing point. To absorb labor at the proper rate the organization of industry must be working smoothly enough to re-employ rapidly all productive resources. Whether such a process of reorganization can be obtained depends upon the ability of the government to meet the emergency with a wise policy.

Many well-meaning and thoughtful people insist that this maximum determines the effective demand for labor and that no action is necessary to prevent a glut of the labor market during the coming crisis. Despite the fact that men are being rapidly thrown into the market, they believe that "the simple and obvious system of natural liberty" will offer an easy solution. They are content to leave "industrial initiative" to solve the problem or to let the problem take care of itself. They know that, where the government does not interfere, the active impulse in getting labor and capital employed and their several employments organized into an industrial system is the employer's expectation of profits. If he foresees a profitable market for his wares he will hire laborers, buy raw materials, and incur the other expenses of production. This involves employment for laborers, and demand for the goods of other concerns. If he foresees a small market or none at all, he will allow his plant to stand partially or wholly idle and will give employment to few laborers or none at all. Since all other employers do likewise, the problem of employment receives a simple and obvious solution. Thus the effective organization of all its elements into an industrial system is contingent upon a correct anticipation of markets and profits by employers generally. The question is whether this reliance upon the initiative of employers, impelled by anticipated profits, can be depended upon for the reor-

ganization of the industrial system upon a peace basis in the present emergency.

For two reasons this reliance seems misplaced. In the first place ordinary business practice cannot be depended upon speedily to secure the full employment of all productive resources. The end of the war will bring a threat to the employer's profits. The cancellation of government contracts aggregating at least ten billion dollars will rob a large part of the employers of profitable markets. With all due allowance for making up "deferred maintenance" and for renewal of depleted stocks, it seems idle to expect to find an aggregate demand of this size springing up very soon to take its place. The threatened loss to these industries is a threat of a low market to other industries supplying raw material, and of underemployment to the laborers concerned. This discourages buying, which in turn threatens profits. In addition, such disturbance of markets is invariably accompanied by a fall of prices, which further discourages business enterprises and prevents the full utilization of productive resources. From this threat of falling prices not even the best-situated establishments are exempt, for their profits depend upon sales to the employees in establishments now threatened with curtailment or suspension. In the absence of a plan designed to accelerate business enterprise, an industrial depression of greater or less magnitude is threatened, attended by idleness of plants, unemployment of labor, and waste of human and material resources.

In the second place ordinary business practices cannot be depended upon to secure within the period of demobilization a proper distribution of materials and men among different industries. The early end of the war has made it easier for plants to find their way back to peace uses. But if each of the producers supplying a part of the ten billion dollars' worth of goods to the government is to be left to decide for himself what he shall produce, the immediate result will be the overproduction of certain goods by some, the underproduction of other goods by others, and nonproduction by still others who see no profitable markets. The losses attending overproduction will impose a check upon business enterprise and lead to a still further disorganization of the system. Of course sooner or later business will expand and eventually the system can

be made to absorb all the capital and labor, at least all that survives. But this readjustment by a process of trial and error is wasteful and, in view of the magnitude of the task, slow. At best, it is a poor alternative to a carefully formulated plan which approaches the problem as one of industrial organization and attempts to formulate principles for the proper apportionment of men and materials between different industries.

In lieu of this a positive governmental plan seems far better. It should serve the double end of providing "buffer" employment for the surplus labor discharge from the army and of stimulating the resumption of peace-time industry as rapidly as is consistent with stability. The first demand can best be satisfied by a system of public works, such as railroad improvement and extension, irrigation, highways, housing, etc. This can be undertaken by the federal government, by the states, and by municipalities. The second demand can be met by removing the unnecessary uncertainty which employers will face and by quickening the expectation of profit, the motive which speeds the reorganization of industry. To this end the most effective devices are perhaps a plan for conversion of plants to the end that they be properly proportioned in the production of various commodities, a governmental underwriting of the risks of business, and a proper distribution of government orders. The government has the right to prescribe the conditions under which these privileges are extended. It can, therefore, avoid much of the waste of the transition period by making the maintenance of a minimum of labor standards a condition of the extension of credits. Only through the stimulation offered by some such devices can a level of production be maintained which will insure full employment to the men discharged.

c) Estimate of probable demand: It is manifest that any conscious attempt to secure equality between the rate of flow into the labor market and the rate of opening of new employment through conscious control of any of the factors is impossible without at least an approximate estimate of anticipated employment. This involves a double calculation of the total employment eventually to be offered and of that available in the immediate future.

In determining the total it seems reasonable to assume that the industrial system to be re-established will be much like that which prevailed before the war. If we assume that old business will be resumed, that nonessential industries will once more attain their former positions, and that essential industries need no longer practice economy in the use of man power, we shall have a fair basis for the calculation of new employment. The employment figures obtained by a comparison of present with pre-war conditions can be checked by translating a similar comparison of the volume and distribution of production into terms of employment. The results of this hypothesis need to be modified in the light of known factors which will make the new peace-time volume of production and of employment different from that which existed before the war. Among such conditions are the increase in the plant capacity of the country, the retention of the policy of rationing raw materials, the continuance of the war-time practice of granting licenses in foreign trade, the introduction of large numbers of women into many branches of industry, and like changes.

In determining the amount of employment available in the near future, the best point of departure is probably a calculation based upon reports by employers of their future demands for labor. This estimate can be revised in the light of what is known about the government's policy for the cancellation of war contracts together with estimates of future business prospects. In the consideration of the latter many items will have to be taken into account which the business man commonly overlooks. These include such things as the future tax policy, the continuance or noncontinuance of priorities, the future trend of exploitative commerce, and the like. In particular the strange behavior of such things as the course of international values, the domestic price level, and domestic rates of wages, all must appear in the reckoning. Above all, in making the final estimates, careful consideration must be given to the incidence of general business conditions in an era of rapid industrial reorganization upon the fortunes of particular businesses and hence upon the level of employment. Such a calculation can for a time, say three months ahead, be only an approximation. But as the figure

for a date three months hence becomes one for two months and again for one month hence, it can become more and more accurate. Besides, the method of trial and error, with the help of a careful check upon results, will reveal a percentage to be allowed for correction of estimates, and this will gradually become more and more reliable.

d) The control of the demand for labor: Calculations such as these are intended to furnish a basis for a control of the rate of absorption into industry. It must not be forgotten that the larger problem of demobilization is to be solved by equalizing the rate at which industry can absorb men with the rate of flow into the labor market. Absorption must be as rapid as discharge if a glut of the labor market is to be prevented. If it be more rapid, so much the better; for the higher it is, the easier becomes the solution of the problem. The conscious adjustment of the rate to meet the demand for employment raises the following considerations.

In the first place it is necessary to open employment fast enough to accommodate the total flow into the labor market. A policy which accommodates the surplus from the army by denying employment to discharged munitions workers defeats its own ends. Accordingly, if the problem is not to be muddled, the rate of total absorption must be much higher than that of the discharge of soldiers. It need not be high enough to absorb both bodies; for large numbers of the laborers will be set to new work in the establishments in which they are employed, and many war workers, lured into industry for the time by high wages or patriotic motives, will voluntarily retire. But how large this volume will be and at what rate it will open needs to be determined as definitely as possible. In passing it is of note that while discharged soldiers will come upon the labor market in a steady flow, the munitions workers are likely to be thrust upon it pell-mell in a body. In fact the crux of the problem is to prevent the disorganization of the labor market which the discharge of this large body of civilian workers threatens.

In the second place the rate of absorption can be increased by a conscious policy aiming at a maintenance of the level of production and of employment. The underwriting of production risks, the apportionment of government orders, the careful planning of

the cancellation of government contracts, and like devices, already suggested in other connections, are means to this end.

In the third place a temporary check upon the rate of flow into the labor market may be provided through buffer employment. National, state, and municipal governments alike need public works. Railroad extension and deferred maintenance, waterways, road construction and repairs, housing, public utilities of one kind and another are all worth undertaking. These expenditures are all subject to conscious public control. They can be made to yield employment just at a time when the threat of a glut of the labor market is most acute. Since the control which sanctions the project can also impose conditions these operations can be used to stabilize and standardize conditions of labor. But if these undertakings are left to the separate action of one federal government, forty-eight distinct states, and two hundred cities, the very purpose which they are to serve will be seriously impaired. There is every reason for thinking that under so many separate plans the volume of employment will not progressively correspond to the need for it. Without interfering in the least with the right of state or city to spend its money for what it likes, a consistent plan can be recommended to these varied authorities specifying the time at which each should begin its public works. By this device of "staggering" public works, employment can be found for the excess of labor which industry cannot take, it can expand as this surplus increases, contract as it contracts, and gradually pass off into nothing as the resumption of the ordinary industry of the country makes buffer employment unnecessary.

To sum up, it is clear that the rate of absorption into industry is the active and variable factor in the demobilization problem. It must be adjusted to the rate of discharge from the army as well as the reverse. This can be done by the use of public works and a governmental plan for the speedy return of industry to a peace footing. This involves no policy of meddling on the part of the state. It implies no undue extension of control after the transition to peace has once been effected. It is a mere device of effective organization for meeting a crisis as grave as that presented by the war itself.

III. THE PROBLEM OF PERSONNEL

Within the confines of this larger problem lie a multitude of particular problems relating to the adjustment of men and tasks. In the transition to peace there is grave danger of a reckless sacrifice of human and material resources. If this is to be avoided, men must be put into positions for which their aptitudes and training fit them, and tasks must be assigned to those competent to fill them. To accomplish this the discharged soldiers must be distributed into occupational groups and the employment made available must be similarly classified. On this basis for each of the many groups an equality must be established between the rate of discharge and the rate of absorption into industry. This task falls naturally into several parts, each calling for inquiry or decision.

1. *The collection of information.*—A series of adjustments, as comprehensive and delicate as these, can be made only on the basis of the most comprehensive and accurate information. This involves a classification alike of personnel and of positions.

An adequate basis for the division of men into occupational and local groups is to be found in the work already done by the Committee on Classification of Personnel in the army. But since the object of classification in the demobilization period will be the utilization of men in an industrial system organized for peace, it will doubtless have to be amplified and revised. It is evident, for instance, that the pre-war experience of the soldier and his preference of work should count more heavily than they do now. Since he must have a choice of work and of residence, there must be a cross-classification by localities in which soldiers prefer to settle. In all of this the revision of present lists must be guided by the fact that the classification is to be used for civilian rather than for military purposes.

In a similar way a classification must be made of employment available at the end of the war in terms of demand by occupation and by locality. It is important that this also include the time at which various groups of positions will become available.

2. *The adjustment of men and places.*—Such a census of men and employment will doubtless reveal many discrepancies between the sizes of occupational groups and the number of positions available

for them. If the classification of employment is limited to only those jobs which will be available at the end of the war in case the government furnishes no aid, its volume will probably be found inadequate. For these reasons the most careful foresight is necessary to insure the closest approach to an equality between the supply of and the demand for particular kinds of labor.

To this end of closer equality occupational and local groups can be adjusted in response to the distribution of the demand for labor. A classification of men, not only by occupations for which they are best fitted, but also in terms of the alternative employments in which they can engage, gives a wide margin for adjustment. In addition the skill and training of the men are not unchangeable. If an accurate estimate can be made of the distribution of employment at the end of the war, a system of vocational education may be used to increase the numbers in the occupational groups for which the demand is heaviest at the expense of groups less sought after. The comparatively slow rate at which the army will be demobilized gives ample time for the use of a system of this kind.

In a similar way employment can, within prescribed limits, be adjusted to the capacities of the men. To that end each position available should be listed in terms of the occupational qualifications best suited, and those next best suited, to fill it. More important still, the employment made available by government action can be adapted to the distribution of skill and training among the men to be discharged. A careful comparison of the employment which will come without government action, distributed by occupations and localities, with the personnel of the army, similarly distributed, will reveal the greater shortages in the demand for particular types of labor and in particular places. These shortages can be taken into account in formulating a plan designed to maintain the level of production and of employment during the transition period. This plan must provide for types of skilled labor which otherwise will be without a market. In particular it is of note that the war has brought about a great increase in the number of the semi-skilled, particularly in the mechanical arts, for which some provision must be made.

3. *The complication of non-economic factors.*—These problems of personnel are complicated by considerations of a personal and community character. Shall priority in discharge be given to the man who has a business of his own at home, a job promised him there, or independent means and a willingness to shift for himself? Shall prospective soldiers of fortune who wish to see Europe or students who wish to enter European institutions be mustered out of service on the other side? Shall married men be allowed to plead their status to gain an early return and shall those who have wives in France, England, or Ireland be counted, for this purpose, as "married men"? These questions are typical of many which must be cleared up before the personnel question can be settled.

In addition, various community problems enter to confuse the matter. Housing, school facilities, decent working and living conditions, are of importance in the allocation of men. At a time when the government exercises such control over man power it is inconceivable that it should use a plan for returning soldiers to civil life which does not rest upon a determination to place them in such a way that they will have a chance to live healthy, decent, well-rounded lives and to be socially minded residents in their respective communities.

IV. THE PROBLEM OF MECHANISM

The third of the problems of demobilization is that of creating a mechanism for the return of the soldiers to civil life. Demobilization will involve not so much legislation as a series of administrative judgments, and its success will depend upon the quickness with which these can be made. This depends in the last analysis upon the range and accuracy of information at hand and upon a mechanism for translating judgments into accomplishments. This mechanism must be at once comprehensive, flexible, and simple. It must include an organization and all the devices necessary for handling the men from the time their military duties are done until they are again permanently re-employed. It involves an agreement between the War and Labor departments upon a common nomenclature of occupational terms. It may necessitate the completion of the process of demobilization upon shipboard to avoid

delay in port. It will probably involve the reorganization of the army into new units, based upon occupational status, for demobilization purposes. Above all, the mechanism established must give expression to the fact that three thousand miles separate the main stream of new laborers and their new jobs, that inevitable delays will be experienced in placing men, and that expedition is the essential requirement of successful demobilization.

V. THE END OF THE MATTER

The purpose of this discussion has been to indicate the nature of the problem of demobilization, to resolve it into its various parts, and to point out the contingencies of fact and policy, determined or undetermined, upon which its solution must rest. The translation of the program into terms of procedure and the allocation of the various tasks among the various governmental agencies which ramify from Washington are things of no interest to the reader of this article.

Inevitably the question will be raised whether the problem can be handled in such a way as to prevent a glut of the labor market and its attendant consequences in the waste of human and material resources. To this question an uncertain answer must be given. Fortunately several factors point to a favorable solution. There is every evidence that the discharge of men under arms abroad will come slowly. The cancellation of government contracts and the indirect release of war workers is likely to be retarded. In deferred maintenance, in retarded industrial expansion, in depleted stocks, there is a considerable potential demand for goods that may immediately be quickened into actuality and into employment.

But, when all is said, it cannot be overlooked that at bottom the problem is one of the rapid reorganization of an industrial system in which guidance resides in pecuniary motivation. It must readily be granted that the physical capacity of the country holds places enough and to spare for all our displaced laborers. But ordinary business principles and individual initiative cannot be depended upon to secure the desired result without great delay and great waste. A program of control can succeed. But, to be effective,

it must be based upon the most comprehensive and the most up-to-date information, it must combine harmoniously a series of closely related policies, and it must involve the most capable co-ordination of effort to a single end among a large number of governmental agencies. Its success is contingent upon a series of quick administrative decisions adapted to the rapidly changing circumstances of the problem.

Its success is rendered all the more uncertain by three other eternal factors which confuse the problem. The first is public opinion. In its ignorance of industrial organization and its disregard of the questions involved in the problem it will cry out for a rate of speed which will tend toward industrial disorganization. The second factor is political pressure. By congressional fiat some of the issues of the problem are already beyond administrative control. Others run counter to the laudable ambition of many congressional leaders to get out of the war with the utmost dispatch and to stop expenditure at the earliest moment. The third factor is that of administrative personnel. A program must be converted into action by men many of whom are too much concerned with the prestige of their own departments to do effective co-operative work. More serious still, it has always been unfortunately true that many administrators can deal with a problem only after it has been converted into a series of contacts with people who count, and consequently has become a mere means to personal prestige. But, however these factors may count in the balance of forces for or against an intelligent solution of the problem, we shall see what we shall see.

PRODUCTION AFTER THE WAR

There appears to be a widespread belief that the chief industrial task for a long period of time will be the replacement of the capital equipment and durable consumption goods that have been worn out or destroyed during the war, and that the capital equipment—the tools of production—has been so impaired in at least certain of the belligerent countries that production will not reach the normal maximum for several years. It is the purpose of this paper to show that this belief is unwarranted. To this end an analysis will be made of the statistics of occupations to determine what portion of the economic energy of the United States is normally devoted to the repair and replacement of the goods in question.

I. PRODUCTION OF DURABLE GOODS

In 1910 there were 38,167,336 persons ten years of age and over gainfully employed in the United States. These were distributed among the various occupations as follows:

OCCUPATIONAL CLASSIFICATION OF PERSONS GAINFULLY EMPLOYED IN 1910¹

	No. Engaged	Percentage
Agriculture, forestry, and animal husbandry	12,665,693	33.2
Extraction of minerals	1,059,961	2.8
Manufacturing and mechanical industries ..	10,855,224	28.4
Transportation	3,199,069	8.4
Trade	4,347,014	11.4
Public service (not elsewhere classified) ...	532,753	1.4
Professional service	1,712,489	4.5
Domestic and personal service	3,795,133	9.9
Total	38,167,336	100.0

¹ Compiled from Table VI, general tables, Vol. IV, of the Thirteenth Census. This table differs from Table I, Vol. IV, of the Census, in that persons engaged in clerical occupations are distributed through the other occupations.

It thus appears that approximately one-third of the persons gainfully employed were engaged in agriculture, forestry, and animal husbandry, a little more than one-third in the manufacturing and mechanical industries, transportation, and the extraction of minerals, and a little less than one-third in trade and in public, professional, and personal service. It is evident that of these eight classes of occupations those persons that were engaged in the production of durable goods will be found in the first four classes, with slight additions from the fifth and seventh classes.

Considering each of these six divisions in order, we find, first that of those engaged in agriculture, forestry, and animal husbandry the following number of persons may be considered as having been engaged in the production of durable goods:

	Persons Engaged
Nursery and orchard foremen, managers, and laborers	37,632
Ditchers.....	15,198
Irrigators and ditch tenders.....	2,883
Blacksmiths, engineers, and machinists.....	3,877
Farmers and farm laborers.....	590,000*
Forestry.....	178,372†
Total.....	827,962

* Assuming that 5 per cent of the work of the farmers and farm laborers is devoted to the construction and repair of farm equipment.

† Includes woodsmen and lumbermen.

In arriving at the number of persons within the second group that were engaged in the production in question, those that are listed as engaged in production that does not issue into durable goods will be deducted from the total number engaged in the extraction of minerals. The following may be said to belong to this group of producers:

	Persons Engaged
Coal-mining.....	521,745*
Salt mines, wells, and factories.....	6,176
Oil wells and gas wells.....	55,305
Total.....	583,226

* This is seven-ninths of the total number of persons engaged in coal-mining. About one-third of the coal mined is used in manufacturing, and about two-thirds of the manufactures, reckoned on the basis of persons employed, as is shown later, are durable products.

Deducting this sum from the total number of persons engaged in the extraction of minerals, 1,059,961, we have 476,735 persons in this group whose labor resulted in the production of durable goods.

Following a similar method in arriving at the number of persons in the manufacturing and mechanical industries group who may be counted as engaged in the production of durable goods, the following deductions may be made from the total number of persons engaged in these occupations:

	Persons Engaged*
Chemical and allied industries, excluding paint and fertilizer factories.....	89,762
Clothing.....	677,853
Food and kindred products.....	425,890
Leather industries, not including harness and saddle factories.....	303,480
Liquor and beverage industries.....	99,115
Box factories.....	16,944
Paper and pulp industries.....	126,827
Printing and bookbinding.....	352,965
Textile.....	836,481†
Broom and brush factories.....	16,238
Button factories.....	14,777
Cigars and tobacco factories.....	194,502
Electric light and power plants.....	60,595
Gas works.....	45,070
Oil refineries.....	25,966
Rubber factories.....	56,208
Straw factories.....	7,107
Total.....	3,349,780‡

*Deductions were made in the case of each of these industries of persons engaged in repair work about the plants.

† Excluding carpet mills and sail, awning and tent factories.

‡ "Other miscellaneous industries" and "other not specified industries" in which 583,572 persons were engaged are counted as producers of durable goods.

Deducting this sum from the total number of persons engaged in the manufacturing and mechanical industries, 10,855,224, there remain 7,505,444 persons in this group that may be considered as engaged in the production of durable goods.

Turning next to a consideration of those who were engaged in transportation, the following may be said to have been engaged in producing durable goods.

	Persons Engaged
Construction and repair in water transportation....	4,503
Construction and maintenance of streets, roads, sewers, and bridges.....	223,215*
Electric and street railways.....	43,383†
Steam railroads.....	708,435‡
Telegraph and telephone.....	46,612§
Express companies.....	238||
"Other and not specified transportation" (largely pipe lines).....	3,876¶
Total.....	1,030,262

* Total number reported, including clerks, etc., but excluding bridge- and tollgate-tenders, lamp-lighters, and street-cleaners.

† Members of skilled trades, linemen, car-repairers, and laborers.

‡ Members of skilled trades, bridgemakers, car-repairers, laborers, and section hands.

§ Members of skilled trades and linemen.

|| Members of skilled trades.

¶ Excluding owners, agents, and clerks.

Lastly, of those who were engaged in wholesale and retail trade, 125,000, the estimated number of those trading in durable goods, may be included here, and also, 118,733 of those who were rendering professional service, this being the number listed as engaged in the scientific professions.

Combining the results of the foregoing computations, we have the following:

PERSONS ENGAGED IN THE PRODUCTION OF DURABLE GOODS

Agriculture and forestry.....	827,962
Extraction of minerals.....	476,735
Manufacturing and mechanical industries.....	7,595,444
Transportation.....	1,030,262
Trade and professional service.....	243,733
Total.....	10,084,136

The number thus derived is less than 26 per cent of the total number of persons reported as gainfully employed in the year in question. How exactly this represents the proportion of the indus-

trial population that is normally engaged in the production and repair of durable goods it is difficult to say. In the first place, census statistics are somewhat unreliable, and, further, the classifications as given in the census make a study such as this dependent in considerable part upon estimates. This result is offered only as an approximation, but it is believed to err in the direction of overstating the number engaged in the production of durable goods rather than the reverse. The number of persons who are counted as having been engaged in the production of durable goods within the mining and manufacturing groups was determined by deducting from the total number engaged those shown to have been engaged in the production of non-durable goods rather than by counting those who were definitely listed as engaged in work that results in the production of durable goods. Further, the definition of durable goods as here employed includes all industrial equipment, all means of transportation and communication, all buildings, public and private, all household furnishings, and all household equipment that is made of wood or metal. If the number of persons engaged in the production of vehicles, automobiles, and household furnishings and equipment were excluded from the group of producers of durable goods, the number remaining, it would seem, would be well below 25 per cent of the total number gainfully employed.

II. PRODUCTION OF CAPITAL EQUIPMENT

The foregoing analysis included a large number of goods that in no way condition the productive capacity of a community. Productive ability depends primarily upon factories and factory equipment, agricultural implements, and railway transportation. Since the purpose of this part of the analysis is to afford some estimate of the length of time that will be required to regain normal maximum production in the belligerent countries, the investigation will be limited to these forms of capital equipment. And since the lack of repair and construction of these capital goods during the war has been due to the absence of wage-earners rather than to the absence of officials or office employees, and will be made up by their return, the number of wage-earners rather than the total

number of persons engaged in the production of these goods will be considered as the decisive factor.

The count of wage-earners in this class of production will be made largely from data contained in the abstract of the census of manufactures for 1914. This census covers establishments which had a value of products of at least \$500 for the given year. The number of wage-earners reported is the average number employed during the year. The fact that there was considerable unemployment during 1914 makes the data for this year somewhat unsatisfactory for this purpose, but as allowance can be made for this fact it is advisable to use this census rather than that for 1909.

Data are not available as to the labor power devoted to the construction and repair of factory buildings, but the census for 1910 shows 1,661,094 persons engaged in the building trades. It is perhaps safe to assume that not more than 10 per cent of the labor of these persons is devoted to the repair and construction of factory buildings.¹ On this assumption, after first augmenting the number by 6 per cent, which was the rate of increase in the number of wage-earners in the manufacturing industries from 1910 to 1914, there were 176,076 persons employed in the construction and repair of factory buildings in 1914.

Turning next to a consideration of the number of wage-earners employed in the manufacture of factory machinery, we find that in 1914 there were 362,471 wage-earners employed in the manufacture of foundry and machine-shop products. These products are classified under 18 divisions² into 647 products, comprising almost all of

¹ Estimated on the basis of the number engaged in manufacture as compared with the number engaged in trade and professional service and as compared with the total population, and also by comparing the total value reported for farm buildings in 1910, \$6,325,451,000, with the combined capitalization of all manufacturing establishments for 1909, which was reported as \$18,428,270,000.

² Products intended for general use.

Machines and articles for use in the manufacture of food and kindred products.

Machines for use in the textile industries.

Machines and articles for use in the manufacture of iron and steel and their products.

Machines for use in the manufacture of lumber and timber products.

Machines for use in the manufacture of leather and its finished products.

[Note 2 continued on opposite page]

the factory machinery produced and, in addition, certain articles that are designed for household consumption. There are, however, articles of factory equipment, listed elsewhere in the census, which must be included here. The establishments which were devoted to the manufacture of electrical machinery, apparatus, and supplies employed 118,078 wage-earners. The value of subsidiary electrical products manufactured by other firms was 7.2 per cent of the value of the product of these establishments. The classification of the electrical products with their values shows that at least one-fourth of the total may be reckoned as not intended for use in factories. Increasing the number of wage-earners reported by 7.2 per cent and reducing the total by one-fourth, we have 94,935 as the number of wage-earners who may be said to have been engaged in the production of electrical factory equipment. Engines, steam, gas, and water, engaged the services of 29,657 wage-earners. In terms of value, 45 per cent of the engines produced were designed for use outside of factories. On this basis 16,310 wage-earners were producing engines for factories use. In the making of gas machines 731 wage-earners were employed, and 6,188 were employed in the production of steam and other power pumps, which may be included here. Four thousand nine hundred and fifty-three wage-earners were employed in making machinists' tools, 3,643 in producing machine screws, 4,560 in making saws, and 7,639 in producing tools

Machines for use in the manufacture of paper and of articles from paper, and in the printing, publishing, and allied industries.

Machines and other products for use in the manufacture of liquors and beverages.

Machines and devices for use in the manufacture of chemical and allied products.

Machines and supplies for use in the manufacture of stone, clay, and glass products.

Machines and materials for use in the manufacture of metals and metal products other than iron and steel.

Machines for use in the manufacture of tobacco.

Machines and materials for use in the manufacture of vehicles for land transportation and by railroad repair shops.

Machines and devices for use in building and equipping ships.

Machines and appliances for use in the manufacture of the miscellaneous group (excluding shipbuilding).

Products intended for use in manufactures in general.

Products intended for use in mining.

Products intended for use in agriculture.

which were not specified. One-half of each of these last two totals may be estimated as representing the part of the production that was designed for use within factories. In the manufacture of sewing machines and attachments 14,308 wage-earners were employed. Perhaps at least one-half of this product was for home use rather than for use in factories. Bringing these data together we have the following result:

PRODUCTION OF FACTORY EQUIPMENT

	Wage-Earners
Factory buildings.....	176,076*
Foundry and machine-shop products.....	362,471
Electrical machinery apparatus and supplies.....	94,935*
Engines.....	16,310*
Gas machines.....	731
Pumps, steam and other power.....	6,188
Machinists' tools.....	4,953
Machine screws.....	3,643
Saws.....	2,280*
Tools "not specified".....	3,820*
Sewing machines and attachments.....	7,154*
Total.....	678,561

* Estimated.

Thus the total number of wage-earners employed in the production of factory machinery and in the construction and repair of factory buildings in 1914 was less than 2 per cent of our industrial population, assuming that 40,000,000 persons were gainfully employed in that year, and the number of wage-earners employed in the production of factory machinery alone was but slightly more than $1\frac{1}{4}$ per cent of the industrial population.

The manufacture of agricultural implements requires the services of but a very small number of wage-earners, 48,459 persons being reported as employed as wage-earners in this industry in 1914. To this number may be added one-tenth of the total number of wage-earners employed in the manufacture of engines, 2,966, as traction engines made up one-tenth of the value of the engines produced. It may also be noted that a few agricultural implements were included with foundry and machine-shop products.

The relatively small amount of labor power that is devoted to the manufacture of machinery in the United States is not due to an excess of foreign imports of machinery over exports. In fact, our exports of machinery greatly exceed our imports. For the fiscal years ending June 30, 1913, 1914, and 1915, the value of such exports, machinery and agricultural implements, was respectively 22, 22, and 20 times the value of the machinery and agricultural implements imported.¹

The Statistics of the Railways in the United States for 1914, published by the Interstate Commerce Commission, gives the following data relative to the number of persons employed in construction and repair work upon our railways:

RAILWAY EMPLOYEES

Machinists.....	56,468
Carpenters.....	72,923
Other shopmen.....	256,133
Section foremen.....	44,977
Other trackmen.....	337,451
Total.....	767,952

The abstract of the census of manufactures lists 71,679 wage-earners as employed in the construction of cars and locomotives by companies other than railway companies. This makes in all 839,631 wage-earners employed in railway repair and construction.

Combining the foregoing data we may arrive at the total number of wage-earners employed in the construction and repair of factory and railway equipment and agricultural implements.

REPAIR AND CONSTRUCTION OF SELECTED FORMS OF
CAPITAL EQUIPMENT

	Wage-Earners
Factory buildings and machinery.....	678,561
Railway rolling stock and roadway.....	839,631
Agricultural implements.....	51,425
Total.....	1,569,617

The foregoing number does not include all of the wage-earners whose labor contributed to this production. Particularly, no

¹ Monthly Summary of the Foreign Commerce of the United States, June, 1915.

account has been taken of the labor required to produce the raw material necessary to the construction and repair of these capital goods. As the present purpose is to afford some basis for judgment as to the length of time that will be required to make up the war loss that has been suffered in the equipment under consideration, and as the volume of raw materials now being produced for military production is more than adequate for this purpose, it was not deemed necessary to include an investigation of the labor required for the production of the raw materials employed in this capital production.

The preceding figure is also offered only as an approximation. Accepting it as such, and augmenting it by 10 per cent to allow for the unemployment during 1914, we reach the conclusion that approximately 1,727,000 wage-earners were normally devoted to the production in question four years ago. This was but slightly more than $4\frac{1}{2}$ per cent of our industrial population.

III. CONCLUSIONS

It is evident from the foregoing investigation that the task of repairing the waste of war suffered by the principal forms of capital equipment is far from prodigious. In our own case we have sufficient man power in the military service and in munition production to make good in an incredibly short time any loss which we have suffered in factory or railway equipment or agricultural implements. If the repair and construction of these goods has been only 50 per cent of normal during the past twelve months, on the basis of the foregoing count the men now in military service could make up the loss in less than three months if their labor were applied to this end. Of course, the labor released by the termination of the war cannot be directed wholly to this work of replacement, but the volume of labor to be released is so large proportionately to the labor power normally devoted to the construction and repair of capital goods as to clearly indicate that lack of labor need not long delay the repairment necessary for the production of the normal volume of the peace-time output. To a somewhat lesser degree this should be true also of England and France, and even of Germany. It also follows, obviously, that the demand on the part of the entrepreneurs

for labor with which to replace the decline in capital equipment which they have suffered cannot be considerable.

Further, the work of bringing out total stock of durable goods up to normal is also less formidable than is commonly assumed. While the maintenance and extension of these goods have suffered somewhat during the war, production in these lines has been far from checked. If, however, we assume it to have been only 50 per cent of the normal during the past year, then, on the basis of the count in the first section, the men now in military service represent enough labor power to make up the loss in a little more than a year.

Conspicuous among the forms of durable goods that have suffered in upkeep and extension during the war are buildings and roadways. But as the total number of persons engaged in the building trades in 1910 was less than one and three-quarter millions, and the number engaged in the construction and repair of roadways was less than a quarter of a million, it is evident that such work cannot absorb a proportionately large amount of the labor released at the termination of the war. Construction work may be expected to represent more than a normal proportion of our economic output during the next few months and should be encouraged as a means of alleviating the unemployment that may accompany the shift from war production to peace-time production, but the large part of our economic energy now, as before the war, will be devoted to the production of consumption goods and largely to the production of non-durable as compared with durable consumption goods.

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THE TAXABLE INCOME OF THE UNITED STATES

This study attempts to determine the national income of the United States and the portion thereof subject to excess-profits and income taxes for the years 1917 and 1918. It divides itself into *two* parts: *first*, a study to determine the national income for the year 1917 and to set forth the factors which will govern its increase in 1918; and, *second*, a study of the taxable net income of the people of the United States subject to excess-profits and income taxation.

I. NATIONAL INCOME FOR 1917

The national income or dividend, as the term is commonly used by economists and statisticians, consists primarily of the sum total of goods and services produced for exchange by the labor of hand or of brain through the utilization of our national resources. To this are usually added some goods which are consumed by the producer or his family, such as the fuel and food produced by the farmer and his laborers for home consumption. It is not customary, however, to add such things as the garden products of the laborer who does not produce them as a commercial pursuit, or the services of the housewife to her family.

The product brought forth by all these industrial activities would be completely represented by an inventory of the goods and services produced within the year. Such an inventory has never been undertaken. Even if it were available it would be defective for our present purpose, because it would be impossible to make a summation of the various products and set them forth as a total which could be compared with the needs of the government for carrying on the war. No practical summation thereof can be made except in money terms, and the national income is here stated in money units rather than in units of physical product.

All the goods thus produced are normally sold, and the prices which they bring become the gross income of the entrepreneurs who undertook their production. A part of this price must be paid

to others who have furnished land, labor, capital, or other material which was used in bringing forth the goods. What remains of the price of the product after paying these factors is the net income or profit of the owner of the enterprise. The amounts paid to the landowner, the capitalist, the laborer, or the producer of raw material used in manufacture, constitute in turn their income from the productive operation in question. The sum total of our national product is thus distributed as money income to those who furnish labor, land and other natural resources, capital, or materials, to be used by the business men who conduct and assume the final risk of productive operations.

It is possible, therefore, to arrive at the national income in either of two ways. The first is to add together the value of all the products brought forth within the year in excess of the amount thereof that is needed to maintain intact our existing stock of wealth. The second method is to add the incomes of all individuals and the undistributed income of corporations and thus arrive at a summary of income; this summary of individual incomes should correspond exactly to the total national product. The choice between these methods must be governed by the available statistical data. We have chosen the first and have sought to determine the net value that has been added to the output of the nation by farmers, their families and laborers; by manufacturing plants and workers; by those engaged in operating our transportation facilities; by the extraction of minerals; by our public utilities; by those who are engaged in merchandising, at wholesale and at retail; and by the professions of all classes. In arriving at the product of each of these groups the statistics of the various government bureaus and departments have been employed. Sometimes these statistics give the gross output only. Since the materials used by the industry in question are the products of other industries, it is necessary to ascertain and deduct the value of the materials used to avoid double counting.

The estimates of national income which have been used in discussing matters of war finance have varied so widely, and the one here presented is so much larger than some of those commonly given, that it is worth while comparing it in detail with the more

important published figures of national income. Four estimates of national income made recently have attracted wide attention. The one most widely quoted was made by Professor W. I. King, then of the University of Wisconsin, in his book entitled *The Wealth and Income of the People of the United States*, which appeared in 1915. He placed the national income for 1910 at \$30,500,000,000.

TABLE I

TOTAL NATIONAL PRODUCT FOR 1917, BY INDUSTRIES

Extractive, manufacturing, and public utilities:

Farmers and farm laborers, including the members of their families.....	\$14,500,000,000
Manufacturers and manufacturing laborers.....	25,800,000,000
Mine operators and miners.....	3,675,000,000
Steam railroads and their employees...	3,040,000,000
Public utilities and their employees....	2,750,000,000

Subtotal..... \$49,765,000,000

Mercantile and professional activities:

Wholesale merchandisers.....	\$ 2,250,000,000
Professional services.....	2,500,000,000
Retail food dealers.....	2,000,000,000
Services rendered by others, including government employees.....	9,000,000,000

Subtotal..... \$15,750,000,000

Total national income..... \$65,515,000,000

The Hon. A. C. Miller, of the Federal Reserve Board, believes "there is warrant for the opinion that the industrial and business income of the people of the United States for the year 1917 may come close to fifty billions of dollars." The details of this estimate are presented in a paper entitled "War Finance and Inflation," which appeared in the *Annals of the American Academy of Political and Social Science* for January, 1918. Both of these estimates have been made by computing the product of the various industries in the same manner that is here employed.

Professor King also distributed the total national income thus arrived at into family groups. Starting with this distribution, the

Bankers Trust Company of New York City estimated the national income of the people of the United States for 1916 at \$50,000,000,000, and for the year ending June 30, 1919, at \$60,000,000,000. The detailed figures appear in their pamphlets *What Is My Share?* published in March, 1918, and *Twenty-Four Billion*, published in September, 1918. These figures did not purport to be an independent computation of national income but were taken as a conservative minimum estimate for the purpose of distributing the burden of financing the war among the various recipients of income. The fourth estimate is that of Professor B. M. Anderson, Jr., of Harvard University, who places the national income for 1917 at \$68,000,000,000 in an article for the *New York Times Annalist*, January, 1918. He arrives at this figure by taking as a point of departure King's estimate of \$30,500,000,000 for 1910 and increasing it by a factor which expresses the increase in the quantity of physical product multiplied by the rise in the general price level as shown by Dun's index number. He takes as his index of increase in production the growth of railway gross revenues, on the assumption that transportation is a function of production as regards both raw materials and finished product. The growth in the volume of transportation is therefore a measure of the growth in production. Professor Anderson finds that the increase in production from 1910-17 was 31 per cent, and that the increase in prices over the same period was 71 per cent. His computation, then, was as follows: $\$30,500,000,000 \times 1.31 \times 1.71 = \$68,300,000,000$ of national income for 1917.

The estimates of Professor King and Mr. Miller were made by the same method that has been used in this paper. Table II shows in detail the differences between the estimates of King and Miller and those here presented. The estimates of national income produced by the extractive, manufacturing, and public-utility industries are based upon more adequate statistics than are those for commercial and professional service. It is significant that in the estimates shown in the table the striking increase, both of 1917 over 1910 and of the figures presented in this memorandum over those of Mr. Miller, is for the industries where our statistics are most adequate. The rate of increase over King's figures for 1910

is 161.5 per cent in these industries, while for the more speculative portion of the estimate it is only 37 per cent. The increase taken is therefore conservative. The increase shown over Mr. Miller's figures is in the two items of manufacturing and public utilities. He states that the product of manufactures is conjectural, for the reason that it had to be estimated largely from incomplete output and price data. The difference here shown is to be ascribed principally to the more adequate statistics concerning manufactures afforded by the returns by manufacturing corporations to the Commissioner of Internal Revenue. The figure of gross income, being their sales minus the cost of materials used, was compiled by the Department of Internal Revenue in 1916 for the first time.¹ Manufacturing output for 1917 was somewhat larger than for 1916; by applying to the 1916 gross income the increase in the prices of manufactured products we have arrived at a close approximation of the total product of manufactures for the latter year. The latest statistics for steam railroads and public utilities have made possible a closer estimate of the product of these industries than could be derived from the figures available earlier.

TABLE II
COMPARISON OF ESTIMATES OF NATIONAL INCOME

Industry	W. I. King 1916	A. C. Miller 1916-17	David Friday 1917
Extractive, manufacturing, and public utilities:			
Agriculture.....	\$ 6,842,000,000	\$14,300,000,000	\$14,500,000,000
Manufacturing.....	8,200,000,000	14,800,000,000	25,800,000,000
Mining.....	976,000,000	3,500,000,000	3,675,000,000
Steam railroads and public utilities.....	3,000,000,000	3,500,000,000	5,790,000,000
Subtotal.....	\$19,018,000,000	\$36,100,000,000	\$49,765,000,000
Commercial and professional...	11,511,000,000	13,600,000,000	15,750,000,000
Total.....	\$30,529,000,000	\$49,700,000,000	\$65,515,000,000

The explanation of the increase in our national income is to be found in the increased demand for American goods at high prices brought about by the European war. The motive for production is profits. When prospective profits are large, producers employ

¹ *Statistics of Income for 1916*, pp. 38-41.

their plants and the available labor power of the country to the full. The outbreak of the European war transformed the whole scale of economic values in England and France. Previously these nations had set aside and saved a large portion of their national income and invested it in foreign countries. Before the war such investments in England alone totaled \$17,000,000,000.¹ In 1915 our present Allies became willing and anxious to devote not only their entire current productive capacity but their accumulated savings as well to the purchase of goods and services that would aid them in the prosecution of the war. They were willing to mortgage their future national income by floating government loans in the United States and to sacrifice at bargain prices their holdings of American securities, all to the end of securing immediate purchasing power to be expended in the attainment of military victory. The United States was the one country whose industrial condition enabled it to be of signal service to the Allies. As a consequence these new economic valuations, born of this new end to be attained, were reflected in an unprecedented demand for American products at highly profitable prices. All these influences, aided and supported by the rapid expansion of bank credit, maintained prices of products at a level which gave every incentive to bring our productive activity to its full capacity.

After the United States entered the war contracts for war work were let at prices which were certain to afford large profits or else on "cost plus" contracts under which the government assumed the responsibility of labor and materials and assured the producer at least a minimum profit. Under these conditions the high tide of productive activity which had been reached was not only maintained but augmented because of the extensive improvements which had been made in the plants of our manufacturing, public-utility, and mining industries. These had been extended at an unprecedented rate during the two years previous to our entry into the war. More than \$25,000,000,000 were invested in plant and working capital of corporations, farms, and other business enterprises of the United States during the three years ended December 31, 1917. All these plant extensions were of the most

¹ J. A. Hobson, *Export of Capital*, p. 162.

modern labor-saving type and have added largely to our actual and prospective power of production. Our national money income is the resultant of our output of physical goods and services computed at the prevailing prices. A careful study of the physical product during 1917 as compared with the pre-war period shows that this increase in physical output was at least 25 per cent and possibly as high as $33\frac{1}{3}$ per cent. The index number of wholesale prices compiled by the Bureau of Labor Statistics, which covers the largest number of commodities and is the most scientifically constructed of all the index numbers, shows an increase of prices during 1917 over 1913 of 75 per cent. When these two factors of increase are taken into consideration the increase in national income here shown is believed to be conservative.

II. NATIONAL TAXABLE INCOME

National taxable income is a legal as well as an economic concept; it includes only that part of the national income which comes within the scope of the tax laws. All the smaller personal incomes are excluded, as are incomes derived from states and municipalities, either as salaries or interest on bonds. Interest on certain bonds of the federal government and income received in kind, such as the rental value of the house occupied by its owner and the food, fuel, house rent, and other services which the farmer enjoys from his farm, are also excluded at present.

The aggregate net income shown in the personal returns filed for the calendar year ended December 31, 1916, by persons and corporations was \$15,000,000,000; the aggregate shown by persons and corporations for the year ended December 31, 1917, will be \$23,000,000,000. The amounts returned by persons and corporations respectively are shown in Table III. Not all of the income reported pays taxes. It is estimated that of the amount reported by individuals, \$4,700,000,000 was subject to the normal income tax. In addition, \$2,700,000,000 of income which did not pay normal taxes paid surtaxes, making a total of \$7,400,000,000 of personal income which paid normal taxes or surtaxes in 1917 as against \$4,266,000,000 in 1916. All of the income reported by corporations which is not taken as excess-profits tax is subject to

the normal corporation-income tax. Thus \$17,900,000,000 of the national income for 1917 had taxes levied upon it. Table IV shows the comparative figures of income-paying taxes in 1916 and 1917. The taxes assessed against these incomes in 1916 were:

Corporate income.....	\$171,805,150
Individual income, normal.....	51,440,558
Individual surtax.....	121,046,136
Total.....	\$345,191,844

TABLE III

	1916	1917
Corporations.....	\$ 8,766,000,000	\$10,500,000,000
Individuals.....	6,298,000,000	12,500,000,000
Total.....	\$15,064,000,000	\$23,000,000,000
Less duplication on account of individual returns consisting of dividends	2,136,000,000	3,000,000,000
Net income represented by returns...	\$12,928,000,000	\$20,000,000,000

TABLE IV

	1916	1917
Corporate income.....	\$ 8,766,000,000	\$10,500,000,000
Personal income subject to normal tax....	2,572,027,890	4,700,000,000
Personal income subject to surtax only....	1,694,058,067	2,700,000,000
Total.....	\$13,032,085,957	\$17,900,000,000

For 1917 we estimate that the taxes assessed will be as follows:

Income tax:	
Personal	
Normal.....	\$ 130,000,000
Surtax.....	600,000,000
Corporation.....	528,504,000
Excess-profits tax:	
Individuals and partnership.....	100,000,000
Corporations.....	1,691,600,000
Total.....	\$3,050,104,000

There are two reasons for this increase in taxable net income, one legal and the other economic. The legal reason is the change

in the income-tax law which lowered the exemption from \$4,000 for married persons and \$3,000 for single persons to \$2,000 and \$1,000 respectively. This brought in 2,400,000 returns approximating \$5,000,000,000 of income which would not have been reported under the previous exemptions. The economic reason for the increase is the larger national income.

The manner in which the personal and corporate incomes subject to taxation have grown since the pre-war period is shown by Table V. The figures for the year 1917 are of necessity based upon estimates. The best data available indicate that there are 2,400,000 returns of incomes less than \$3,000 and 700,000 returns of incomes over \$3,000. It has been assumed that the incomes of less than \$3,000 will average slightly over \$2,000 each. In view of the fact that these returns show on the average \$700 of taxable income, this estimate of average income seems conservative.

TABLE V
(000 omitted)

Fiscal Year	Personal Income Reported	Personal Income Subject to Normal Tax	Additional Income Subject to Surtax	Total Personal Income Paying Taxes	Corporation Income Subject to Income and Excess-Profits Tax	Total Income Subject to Tax
1913.....	\$3,900,000	\$1,527,364	\$ 817,000	\$2,344,364	\$ 4,339,000	\$ 6,683,364
1914.....	4,000,000	1,655,949	735,000	2,390,949	3,710,000	6,100,949
1915.....	4,600,000	2,399,578	1,425,000	3,824,578	5,184,000	9,008,578
1916.....	6,298,000	2,572,028	1,694,058	4,266,086	8,766,000	13,032,086
1917.....	12,500,000	4,700,000	2,700,000	7,400,000	10,500,000	17,900,000

The number of returns over \$3,000 shows an increase of 60 per cent over 1916. There is no way at the present time of telling how these returns are distributed, but it is certain that the increase is for the most part in the lower incomes. We have estimated that the total income reported by all people making returns of \$3,000 or over will be \$7,500,000,000, an increase of approximately 20 per cent over 1916. This, added to the \$5,000,000,000 of incomes under \$3,000, gives the total of approximately \$12,500,000,000 shown above as the amount of personal income for 1917. The assumption that the increase in the number of returns was confined entirely to the lower income ranges may seem unwarranted

in view of the experience of 1916 and 1915 as compared with 1914, since in both those years the increase in number of returns was much greater in the upper income ranges than in the lower.

Table VI shows the number of returns at each income range and the rate of increase for 1915 and 1916 over 1914. In comparing 1917 with 1916 and 1915 we must remember that these years were years of rising prices in the security market, while 1917 was a year

TABLE VI
INCOME-TAX STATISTICS*

Incomes	Total Number of Returns			Percentage of 1916 to 1914	Percentage of 1916 to 1915
	1914	1915	1916		
\$ 3,000-\$ 4,000....	82,754	69,045	85,122	102.8	123.3
4,000- 5,000....	66,525	58,949	72,027	108.3	122.2
5,000- 10,000....	127,448	120,402	150,551	118.1	125.0
10,000- 15,000....	34,141	34,102	45,305	132.7	132.9
15,000- 20,000....	15,790	16,475	22,621	143.3	137.3
20,000- 25,000....	8,672	9,707	12,956	149.4	132.4
25,000- 30,000....	5,483	6,196	8,055	146.9	130.0
30,000- 40,000....	6,008	7,005	10,068	167.5	143.7
40,000- 50,000....	3,185	4,100	5,611	176.1	136.8
50,000- 100,000....	5,161	6,847	10,452	202.3	152.6
100,000- 150,000....	1,189	1,793	2,900	243.9	161.9
150,000- 200,000....	406	724	1,284	316.2	177.3
200,000- 250,000....	233	386	726	311.1	188.1
250,000- 300,000....	130	216	427	328.5	197.7
300,000- 400,000....	147	254	469	312.2	184.6
400,000- 500,000....	69	122	245	355.1	200.8
500,000-1,000,000....	114	209	376	329.8	179.9
1,000,000 and over....	60	120	206	343.3	171.7
Total.....	357,515	336,652	429,401	120.1	127.5

*From the *Annual Report of the Commissioner of Internal Revenue*.

of falling prices. It is not possible to determine what proportion of the increase in the personal-income returns for 1916 was due to stock-market profits, but it was probably large. In 1917 there was a widespread taking of losses for income-tax purposes. This was stimulated by the possibility of investing in tax-exempt federal bonds. An actual decline in the number of large incomes would probably have resulted except for the increase in corporate dividends. This increase should maintain the number of returns in the upper ranges because of the large proportion of those incomes

which consists of dividends. For incomes of \$20,000 and over dividends constitute from 33.6 to 59.4 per cent of the total before making general deductions. Dividend payments in 1917 for the companies reported by the *Journal of Commerce* were \$1,062,138,000 as against \$855,787,000 in 1916, an increase of 24 per cent. A group of 301 industrial corporations shows in their published reports dividend payments as follows:

1915.....	\$385,589,000
1916.....	658,726,000
1917.....	734,402,000

Table VII gives the sources of income for each income range, and shows how important the effect of this increase in dividends must have been in maintaining the income in the higher ranges in

TABLE VII
SOURCES OF INCOME BY CLASSES

Income Class	Percentage of Income from Personal Services, Salaries, etc., and Professions	Percentage of Rents, Royalties, and Income from Foreign Securities	Percentage of Interest on Notes, Bonds, Mortgages, etc.	Percentage of Business, Trade, and Commerce Partnership Gains and Profits	Percentage of Dividends	Total Gross Income
\$ 3,000-\$ 4,000.....	47.8	15.5	7.6	24.0	5.1	100.0
4,000- 5,000.....	46.0	14.5	7.4	29.4	2.8	100.0
5,000-10,000.....	36.4	13.6	8.0	32.6	9.5	100.0
10,000-20,000.....	25.8	13.8	8.4	32.5	19.5	100.0
20,000-40,000.....	18.8	12.3	8.6	31.8	28.5	100.0
40,000-60,000.....	13.8	12.4	8.6	31.6	33.6	100.0
60,000-80,000.....	12.8	10.6	8.2	33.3	35.1	100.0
80,000-100,000.....	10.7	12.4	7.8	31.4	37.7	100.0
100,000-150,000.....	11.1	11.1	8.0	33.0	36.8	100.0
150,000-200,000.....	7.6	11.9	7.8	33.2	39.5	100.0
200,000-250,000.....	7.9	10.9	7.9	33.7	39.6	100.0
250,000-300,000.....	6.6	12.4	7.2	30.5	43.3	100.0
300,000-500,000.....	5.5	12.1	7.0	36.3	39.1	100.0
500,000-1,000,000.....	4.4	13.2	7.5	30.6	44.3	100.0
1,000,000-1,500,000.....	4.1	10.3	8.5	33.0	44.1	100.0
2,000,000 and over.....	0.5	5.1	6.9	28.1	59.4	100.0
Total.....	22.1	12.6	8.0	31.7	25.6	100.0

1917. The corporate income for 1917 was estimated by increasing the net income of the various classes of corporations for 1916 by percentages derived from a sampling of the returns. Table VIII shows the increases in each class of corporations for 1917 over 1916,

as well as the growth of corporate net income since the pre-war period. In view of the discussion of the war-profits tax it is of interest to calculate the amount by which the income of the different classes of corporations exceeds their average pre-war income for the years 1911 to 1913 plus an allowance of 10 per cent on their

TABLE VIII

CORPORATE NET INCOME REPORTED TO THE COMMISSIONER OF INTERNAL REVENUE
IN THE PRE-WAR PERIOD AND IN 1916 AND 1917*
(ooo omitted)

Class	1911	1912	1913	Average Pre-War Income	1916	1917
Financial.....	\$ 457,092	\$ 481,622	\$ 438,747	\$ 459,154	\$ 528,000	\$ 630,000
Public service, in- cluding railroads	806,324	930,388	1,003,186	913,299	1,541,000	1,550,000
Industrial (mining and manufactur- ing).....	1,309,819	1,670,334	2,026,884	1,669,012	5,027,000	6,500,000
Mercantile.....	363,306	423,012	473,202	419,840	465,000	720,000
Miscellaneous.....	277,165	326,795	397,532	333,831	1,205,000	1,100,000
Total.....	\$3,213,706	\$3,832,151	\$4,339,551	\$3,795,136	\$8,766,000	\$10,500,000

* The classifications in this table are those employed in the reports of the Commissioner of Internal Revenue for the fiscal years ended June 30, 1910 to 1914 inclusive.

added investment. Here we must proceed upon an estimate of the additional capital invested in the various industries. After an exhaustive study of the subject we have arrived at the conclusion that the additional capital invested in all corporations since the pre-war period, either as surplus or new capital issues, was not over \$15,000,000,000. Table IX is a computation of the amount by

TABLE IX

PRE-WAR CORPORATE EARNINGS AND WAR PROFITS FOR 1917
(ooo omitted)

Class	Average Pre- War Earnings	10 Per Cent on Additional Capital	Total Deduc- tions for Arriving at War Profits	Net Income for 1917	War Profits for 1917
Financial.....	\$ 459,154	\$ 80,000	\$ 539,154	\$ 630,000	\$ 90,846
Public service.....	913,299	200,000	1,113,299	1,550,000	436,701
Industrial.....	1,669,012	1,000,000	2,669,012	6,500,000	3,830,988
Mercantile.....	419,840	90,000	509,840	720,000	210,160
Miscellaneous.....	333,831	130,000	463,831	1,200,000	636,139
Total.....	\$3,795,136	\$1,500,000	\$5,295,136	\$10,500,000	\$5,204,864

which the net income of 1917 exceeds the pre-war profits plus 10 per cent on \$15,000,000,000 additional capital. It is interesting to note that the income remaining in 1917 after the payment of excess-profits taxes is larger than the total net income for 1916 and twice as large as that of 1913, the largest of the pre-war years.

Table X shows the war profits of 1917 for each class of corporations as computed above. It shows also the best estimate of the excess-profits taxes paid by each class which it has been possible to make with the data thus far available. The last column shows the percentage which the excess-profits taxes constituted of the war profits for 1917.

TABLE X
PERCENTAGE OF EXCESS-PROFITS TAXES TO WAR PROFITS FOR 1917
(ooo omitted)

Class	Net Income for 1917	War Profits for 1917	Excess-Profits Taxes for 1917	Percentage of Taxes to War Profits
Financial.....	\$ 630,000	\$ 90,846	\$ 50,400	55.5
Public service.....	1,550,000	436,701	62,000	14.2
Industrial.....	6,500,000	3,830,988	1,300,000	33.9
Mercantile.....	620,000	210,160	99,200	47.2
Miscellaneous.....	1,200,000	636,169	180,000	28.3
Total.....	\$10,500,000	\$5,204,864	\$1,691,600	32.5

III. PROSPECTIVE NATIONAL INCOME AND TAXABLE NET INCOME FOR 1918

In forecasting the national income and the national taxable income for 1918 the fundamental economic factors to be considered are the ratio of the output of actual physical production of 1918 to 1917, and the average price level for the year as compared with that of the previous year. These two factors will determine the size of our national income, out of which the taxable income must be carved by legislation.

The evidence at present available from the reports of the Department of Agriculture as to crop conditions and crop prospects indicates that agricultural production promises to be slightly larger in 1918 than in 1917, especially in the important money-yielding crops of wheat and cotton. A careful examination of the current statistics which are being gathered by the War Industries Board shows that the current productive output in mining and

manufacturing is somewhat increased, although the increase is not a large one. No decrease in national income is therefore to be expected from a decrease of production. The other factor which might decrease our national income, at least as expressed in money terms, would be a fall in the price level brought about by the action of economic forces or by governmental price-fixing. In spite of all attempts at regulation the price level has not been kept stationary. The highest point reached by our prices, as shown by the Bureau of Labor index number of wholesale prices in 1917, was 185 per cent of the average for 1913. Prices reached this point in July; subsequently they declined to 180 per cent in October because of a fall in the price of fuel and lighting, metals and metal products. Since then prices have slowly but steadily risen, until they stood at 203 in August and 207 in September. Table XI shows the movement of prices for the last fifteen months. Bradstreet's index number shows an increase during the first six months of 1918 over the corresponding months of 1917 of 27 per cent. The experience of Canada and England is similar in this matter to our own. Canadian prices for the first six months of 1918 are 21.3 per cent higher than for the corresponding months last year, and English prices for the first six months in 1918 are 13.5 per cent higher than in 1917 and 46.7 per cent higher than in 1916.

TABLE XI

WHOLESALE PRICE INDEX OF BUREAU OF LABOR IN PER-
CENTAGES OF AVERAGE PRICES FOR 1913

¹⁹¹⁷	
July.....	185
August.....	184
September.....	182
October.....	180
November.....	182
December.....	181
¹⁹¹⁸	
January.....	185
February.....	187
March.....	187
April.....	191
May.....	191
June.....	193
July.....	198
August.....	203
September.....	207

There is no likelihood that any program of price-fixing will be undertaken which will reduce prices below the present level. It is optimistic to assume that they will be held as low as they now are. The average of the Bureau of Labor index number for 1917 was 175; the average for 1918 is almost certain to be 195 at least. These facts concerning the price level, coupled with the prospects of slightly increased production, indicate that our national income this year will be \$72,000,000,000 as against \$65,000,000,000 for 1917.

We cannot generalize directly from an increase in our national income to a like increase in our taxable income. In arriving at the latter we must consider not only the size but also the distribution of this national income, first as between corporations and individuals, and secondly as between individuals showing large incomes and those whose incomes are smaller. Here the most pertinent consideration is the movement of wages as compared with the general movement of the prices of products, especially in mining and manufacturing. If wages rise as rapidly as the prices of products, there will be no increase in corporate profits; if they rise more rapidly, corporate profits may suffer a decrease. In the latter case corporate earnings for 1918 will be decreased, and as a consequence dividends will be somewhat reduced. This would mean that the larger personal incomes will be somewhat reduced, since dividends constitute so large a portion thereof. The money wages of the laborer would be increased, thus increasing the number of income-tax returns in the lower ranges.

If this should occur there is still the question as to whether it would constitute a rise in the real wages of the laborer—in what his wages will buy. If the prices of the things which the laborer consumes rise as rapidly as his wages, then the portion of the total national income that the laborer receives is not increased. If food prices should continue to rise, while price-fixing kept the general price level from rising as rapidly through its check upon other prices, then we might well have a situation in which wages rose only enough to offset this increase in food prices. In this case the net resultant might be a decrease in industrial—notably in corporate—net income, an increase in the net income of farmers, and an increase in the money, but not in the real, income of laborers.

This would not necessarily mean a decrease in the amount of income shown by the income-tax returns. That might even increase somewhat. The amount of taxable income would very probably decrease slightly, and the taxes collected under the present law would certainly be smaller. The decrease in taxes would come in excess-profits taxes, in corporate-income taxes, and in the surtaxes on individual income. To offset this it would be necessary: (1) to change the normal income-tax rate on individuals and corporations; (2) to increase the present excess-profits taxes or (3) to substitute therefor, or add thereto, the tax on war profits; and (4) to devise some means of reaching adequately the war profits of farmers, which are now large and which will be larger in 1918. The most feasible way of doing this would probably be to add to the farmer's income as returned by him a flat amount of, say, \$600 for income received in kind in the form of food, fuel, and house rent, and to require other classes to include their income in kind from the occupancy of homes which they own. The inclusion of this income in kind, coupled with a 12 per cent normal income-tax rate, would offset the loss of revenues from the higher incomes.

While no adequate study has been made of the actual movement of the factors above outlined, there are sufficient facts for two definite generalizations at this time: (1) Dividend payments for 1918 promise to be somewhat less than for 1917. The best current figures on dividend payments are found in the compilation of the *Journal of Commerce* of New York City of the dividend disbursements by large industrial, railroad, and street-railway companies. These have paid \$587,439,397 in the first nine months of 1918 as against \$616,368,530 in 1917. This will affect the personal-income returns in the higher ranges of income. (2) The large corporate profits of 1917 were due in part to the rapidly rising prices of products manufactured from materials and supplies which had been purchased at low prices. The rise in prices will no doubt be less in 1918 than it was in 1917, and this element in the earnings will be correspondingly small. While it is impossible to state accurately what the course of wages, prices, and profits will be during the year 1918, the possibility of decreased profits arising from the factors above assumed seems to be so great that they must be considered as probabilities in planning new revenue legislation.

As regards the corporate industry of the country the estimate of the writer is that financial, public-utility, and railroad corporations will show net incomes materially smaller than in 1917. Miscellaneous corporations and mercantile corporations will not decrease much. Mining and manufacturing may decrease as much as 10 per cent. When all these things are taken into consideration it is estimated that the total corporate income reported for 1918 will be \$9,700,000,000. Even if corporate earnings decrease in 1918 in accordance with this prophecy, there will still be large war profits. The invested capital in 1918 will be \$4,000,000,000 greater than in 1917. Table XII is an estimate of the

TABLE XII
ESTIMATE OF CORPORATE NET INCOME AND WAR PROFITS FOR 1918

Class	Total Deductions for Arriving at War Profits	Estimated Income 1918	Income Subject to War-Profits Tax
Financial.....	\$ 559,154,000	\$ 600,000,000	\$ 40,846,000
Public service.....	1,153,299,000	1,400,000,000	246,701,000
Industrial.....	2,969,012,000	5,900,000,000	2,930,988,000
Mercantile.....	529,840,000	700,000,000	170,160,000
Miscellaneous.....	483,831,000	1,100,000,000	616,169,000
Total.....	\$5,695,136,000	\$9,700,000,000	\$4,004,864,000

corporate net income for 1918 by classes and a computation of the amount by which that net income will exceed the pre-war profits plus 10 per cent on additional capital for each class of industry. If war profits are computed by allowing all corporations a minimum deduction of 10 per cent on their pre-war invested capital, even though their earnings are less than that amount in the pre-war period, the war profits would be further reduced. Table XIII is an estimate of war profits for 1918 after deducting either the earnings for the pre-war period or 10 per cent on pre-war invested capital, whichever is larger.

War profits for 1918 will be 77 per cent of those for 1917, as shown on page 963, if computed by deducting average pre-war earnings plus 10 per cent on additional capital. If a minimum deduction of 10 per cent on all invested capital, pre-war as well as additional, is allowed, war profits will be 63 per cent of those

for 1917. Even when calculated on the latter basis a war-profits tax of 80 per cent for 1918 would yield a revenue 55 per cent greater than the excess-profits tax of 1917. If war-profits were calculated on the former basis, an 80 per cent tax would yield twice the revenues received from the excess-profits tax of 1917.

TABLE XIII

Class	Total Deductions for Arriving at War Profits	Estimated Income 1918	Income Subject to War-Profits Tax
Financial.....	\$ 580,000,000	\$ 600,000,000	\$ 20,000,000
Public service.....	1,300,000,000	1,400,000,000	100,000,000
Industrial.....	3,400,000,000	5,900,000,000	2,500,000,000
Mercantile.....	550,000,000	700,000,000	150,000,000
Miscellaneous.....	600,000,000	1,100,000,000	500,000,000
Total.....	\$6,430,000,000	\$9,700,000,000	\$3,270,000,000

Summarizing all these facts and considerations, we arrive at the following comparisons of net income shown by the income-tax returns for 1918 as compared with 1917.

	1917	1918
Corporate incomes.....	\$10,500,000,000	\$ 9,700,000,000
Individual incomes.....	12,500,000,000	14,100,000,000
	<u>\$23,000,000,000</u>	<u>\$23,800,000,000</u>
Less duplication on account of individual returns consisting of dividends.....	<u>3,000,000,000</u>	<u>2,800,000,000</u>
Net income represented by returns..	\$20,000,000,000	\$21,000,000,000

Of the income thus returned the following amounts will pay taxes:

	1917	1918
Corporate incomes subject to excess-profits and income taxes.....	\$10,500,000,000	\$ 9,700,000,000
Personal incomes subject to normal taxes.....	4,700,000,000	5,500,000,000
Additional personal incomes subject to surtaxes only.....	<u>2,700,000,000</u>	<u>2,500,000,000</u>
Total.....	\$17,900,000,000	\$17,700,000,000

NOTES

INTERNATIONAL TRADE POLICY AND THE COMING OF PEACE

Among the few valid arguments which the protectionists occasionally exploit against the adoption of free international trade there is one to which attention at this time may be directed with especial profit. It is this: granted, as it must be, that it is better for all classes of producers in a country to specialize in the production of those commodities or goods for which their resources and their talents particularly qualify them in comparison with other countries, there must be inevitable loss and hardship upon those producers already engaged in industries in which the country has no relative advantage, in shifting to the lines of production where the only favors which need be relied upon are those of nature and hereditary endowment. It will be readily conceded that if there are industries in operation so little adapted to the country that they are unable to withstand the competition of like industries in other countries, notwithstanding the handicap under which these latter compete due to freight differentials, the adoption of a free-trade policy will involve as a necessary consequence some impairment of capital for those interested in such enterprises and certain inconvenience to those therein employed. In the case of long training in the acquirement of a special skill, which the enforced change of occupation makes useless, it will even result in very great and irreparable hardship.

It is recognized as true, alike in biology and in physics, that changes in conditions involve readjustments in functioning units. It is taken as equally true that readjustments unavoidably involve a certain amount of friction, loss, and waste. In industry no less than in biology and mechanics are these principles applicable. The question, however, cannot be thus easily dismissed. The real problem is not to determine whether such waste will occur, for that is admitted, but whether the discounted advantages to accrue in the future from the readjustment outweigh the present disadvantages in making the readjustment. Whether they do or not in any particular case will depend upon two factors: first, the amount of the anticipated future gains; second, the weight of the present burden. Protectionists, accustomed to take the

short-time point of view on these problems, habitually underestimate the first of these factors and overemphasize the second.

The point to the whole discussion, however, is precisely this, that, even making due allowance for the more sanguine temper of free-traders, there are certain objective facts peculiar to current American conditions which tend to support them in denying that the losses incident to the industrial readjustment which the establishment of a free-trade policy will occasion more than offset the probable gains from the extension of industries for which this country is better fitted. In other words, it may logically be contended that as applied to the situation which will follow the coming of peace the argument of the protectionists is discredited. The circumstances justifying this contention are the following:

The redistribution of industrial forces necessitated by the war has brought about a highly unstable equilibrium. Capital has been quite unceremoniously uprooted from long-continued uses and applied to new uses (not alone by the pressure of market conditions but also by the activities of the Conversion Division of the War Industries Board). Current increments to the capital fund have to a still higher degree had their uses dictated (by the Capital Issues Committee of the Federal Reserve Board and of the War Finance Corporation and by the Non-war Construction Section of the Priorities Division of the War Industries Board) through restrictions on the channels of investment. Taking the field of industry by and large one may say that never before has there been such a curtailment of what may be regarded as vested proprietary interests due to long-standing exploitation of particular fields. So far-reaching have been the changes in the "regular course of trade" and so pervasive has been the control over the direction of employment of new savings that worthy claims for the protection of established trade built up through a long process of persevering effort and legitimate dealings will remain few indeed. The whole field of industry has undergone and is undergoing a fundamental transformation. The chief characteristic of the existing industrial and business arrangements is, consequently, their transitoriness. Nowhere is this better recognized than among business men themselves, who, for example, in making government contracts and in fixing current prices have insisted upon it with the passion of those who speak from conviction.

Furthermore the shifting of labor from peace-time employments to war-time employments has by general admission been upon an unprecedented scale. Large sections of the working population have been compelled not only to change their jobs but to change their residences

as well. It has occasioned them no little difficulty and considerable losses. But no one denies that there will presently be a large proportion of these workers who will be compelled again to change their employment. Moreover, the re-employment of an army approaching 3,000,000 men will by itself present a problem of readjustment which is not generally regarded as mean.

The conclusion is that since the burdens of readjustment will be with us in any case and must be undertaken regardless of the international trade policy adopted, a just regard to the economic interests of all classes in the nation will lead to the inauguration of freedom of trade, which clearly tends in the long run to maximize the net income from the exploitation of our resources and the employment of our talents. Whatever force there may be in the protectionist argument that the waste and loss occasioned by the abandonment of industries which can subsist only by special privileges outweigh the advantages to be gained by specialization in doing the things we can do best, this argument obviously falls down when applied to the situation which now confronts us.

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WASHINGTON NOTES

DEMobilIZING INDUSTRY

The announcement on November 11 of the conclusion of an armistice with the German government has been the most important economic and financial occurrence since the beginning of the European War. Already it has had fundamental effects upon public finance, government control of industry, banking policies and methods, and the plans and prospects of private business. Thus far, time has not been sufficient to permit these great changes of policy to crystallize in the form of legislation, but the practical results of the peace announcement have nevertheless made themselves obvious.

From the standpoint of public finance the most direct consequence of the changed military outlook has been the reduction of \$6,000,000,000 in the official estimates of the budget for the year 1918-19 (ending June 30, 1919). This estimated reduction has been reflected in announced plans for a corresponding cut in the war-revenue bill now before the Senate Finance Committee. It will be recalled that this bill, as it came from the House of Representatives, had aimed to provide for a revenue of

\$8,000,000,000, although according to some legislators a yield of \$9,000,000,000 was more likely to result from it. In the Senate committee during the months of September, October, and the first half of November this bill has been so reshaped as to reduce the expected revenue to something in the neighborhood of \$6,250,000,000, while plans have been devised for the addition of consumption taxes likely to yield from \$2,000,000,000 to \$3,000,000,000 more. The changed financial outlook has now led to official recognition that a total revenue to be raised from the bill amounting to possibly \$6,000,000,000 will be sufficient. This will permit a modification of the excess-profits tax, which in the opinion of good judges had been placed at a dangerously high figure, and may further result in some modification of income-tax rates, though this appears much less likely. Expecting a material reduction in the burden of taxation, bankers recognize the unavoidable necessity of another large Liberty loan, preceded by short-term financing designed to anticipate it, as in the previous issues. This leaves the financial community still suffering, not only from actual, but also from prospective, strain.

Meanwhile the signing of the armistice has resulted in direct industrial changes calculated to facilitate the shifting of business back to a peace basis. Of these the most significant are the changes in the system of "priorities," announced in the *Official Bulletin* from day to day during the week ending November 15, and intended to substitute priorities in favor of industries regarded as "essential" to reconstruction for priorities in favor of industries "essential" to war. A material change has incidentally been produced in transportation due in part to this modification of the priority system and in part to the suspension of the hurried movement of troops by land and water. Meanwhile the process of putting business into position to compete abroad has begun. Arrangements are already making for the shifting of industrial plants from government work to private operations and this transfer has been expedited by the cancellation of many government contracts. The question how far the process of shifting will affect prices or wages is still open to discussion. In some fields an effect is already noted. Prices of cotton and other staples have shown a downward tendency, while the curtailment of overtime at many plants has been equivalent to a real, if disguised, cut in wages. Altogether it is evident that the process of converting industry back to a peace basis has begun. The movement is showing itself to be fully as important and far-reaching as was the conversion of industry to the war basis in the first place.

QUESTION OF GOVERNMENT OWNERSHIP

Among the problems of demobilization left by the war none is probably of more immediate or more far-reaching significance than the question of permanent government ownership and operation of public utilities. Both as to land and water transportation the situation at the close of the war has become such as to establish a colorable basis for a possible continuance of government control. Government operation of railroads, although originally provided for almost as an incident or afterthought in connection with an appropriation bill, was subsequently given a definite basis in the act determining the relationship between the administration and the roads which set a period of twenty-one months after the establishment of peace as the time for the return of the properties to their owners. In the case of our shipping, the act creating the Shipping Board, adopted before the United States became a belligerent, leaves in a decidedly open condition the question whether a fleet of publicly owned vessels may or may not be continued in operation. On all practical points the subject of government ownership or control is decidedly unsettled, since the contracts between the government and the roads which were to adjust the payments due the latter are not yet completely made, while there is thus far no final accounting for the cost of federal control.

Above all it remains uncertain whether any or all of the changes introduced by public administrators have in fact either accommodated the public or proved economical. They were in many cases of uncertain effect because of the fact that the roads were working at the highest notch of operating efficiency, owing to the presence of an unprecedented volume of traffic. Behind all this is the fact that the roads, at the time the United States became a belligerent, had for a number of years been prevented by the then policy of public regulation of rates from becoming efficient, since they could not obtain the capital necessary for the additions and improvements they needed. Although the pledges both directly and impliedly given during the war period would seem to insure the return of the roads to their original owners, there is already an evident tendency to form two distinct sections of opinion, both in Congress and elsewhere, with reference to the policy to be pursued. The coming two years, during which government control will presumably be maintained, afford an opportunity for a much more careful test of what can be done through public operation than has been feasible in the eleven months of emergency work which has thus far elapsed. That the question of government operation will be a direct issue between the two

principal political parties is already foreshadowed by the developments that have occurred since the elections of November 5. Except for the reports of the Director General of Railroads covering the first few months of government operation, sent to the President in September and already noticed in these pages, no final or satisfactory statistics showing results of government conduct of transportation are as yet available. Even as to the question of earnings, definite conclusions cannot be reached because of the comparatively late date at which the 25 per cent advance in rates of June, 1918, became actually effective. A crucial period of discussion of public ownership thus opens, during which debate will doubtless be based largely upon contemporaneous developments and facts. This perhaps gives the advocates of public ownership a better opportunity for the demonstration of their claims both as to efficiency and as to economy than has ever before been afforded.

COST OF THE WAR

With the ending of the war the problem of paying for it and gradually writing it off from the books of the world presents itself as the most immediate problem. As yet it is practically out of the question to furnish any definite estimate of the total expense incurred by the world at large in carrying the war through to completion. The question of making such a computation is already in the hands of groups of statisticians working under different auspices. A preliminary computation which has been prepared by neutral bankers in Switzerland and which carries the figures down to approximately the beginning of July last is shown in the table on page 976.

In studying this table it should be borne in mind that a sharp distinction is to be drawn between the cost of the war in the larger sense and the indebtedness incurred on account of it. The net debt as shown by the computation given may be taken as perhaps \$125,000,000,000, but to this must be added further sums which will necessarily be raised by borrowing during the coming months of reorganization and payment of war purchases and other current obligations. The figures, moreover, take no account of the currency issues or of floating indebtedness at the banks. If allowance should be made for these various items it would probably be necessary to increase the net war indebtedness to a figure somewhere between \$150,000,000,000 and \$175,000,000,000. This would still represent only the debt incurred in various forms. Additional to it would be the increased taxes borne by several, at least, of the

PUBLIC DEBT, IN MILLIONS

	BEFORE THE WAR			ON LAST KNOWN DATE		
	Date	Amount		Date	Amount	
		Foreign Money	Swiss Valuation*		Foreign Money	Swiss Valuation*
BELLIGERENT STATES						
<i>Entente:</i>			<i>Francs</i>			<i>Francs</i>
Great Britain.....	August, 1914.....	£710	17,907	June, 1918.....	£6,434	162,275
Australia.....	June, 1914.....	£ 19	479	March, 1918.....	£ 194	4,892
Canada.....	March, 1914.....	£ 69	1,740	February, 1918.....	£ 208	5,246
New Zealand.....	".....	£ 92	2,320	March, 1917.....	£ 126	3,177
South African Union.....	".....	£110	3,001	March, 1916.....	£ 151	3,868
France.....	July, 1914.....	Fr. 34,188	34,188	January, 1918.....	Fr. 127,050	127,050
Italy.....	June, 1914.....	Li. 14,407	14,407	December, 1917.....	Li. 34,590	34,590
Russia.....	January, 1914.....	Rb. 9,888	26,369	September, 1917.....	Rb. 40,288	131,436
United States.....	March, 1917.....	\$1,208	6,261	January, 1918.....	\$7,758	40,207
Total.....			106,732			512,081
<i>Central powers:</i>						
Germany.....	October, 1913.....	M. 4,891	6,038	December, 1917†.....	M. 106,605	131,661
Austria.....	July, 1914.....	Kr. 13,029	13,682	June, 1917.....	Kr. 55,105	57,866
Hungary.....	July, 1913.....	Kr. 6,638	6,070	December, 1917†.....	Kr. 28,150	29,560
Total.....			26,600			219,087
Total belligerents.....			133,432			731,768
NEUTRAL STATES						
Denmark.....	March, 1913.....	Kr. 361	501	March, 1917.....	Kr. 583	811
Spain.....	January, 1914.....	Pes. 9,785	9,785	January, 1918.....	Pes. 10,208	10,208
Holland.....	January, 1914†.....	Fl. 1,148	2,392	January, 1918†.....	Fl. 1,609	3,351
Norway.....	January, 1914.....	Fl. 20	41	November, 1917.....	Fl. 287	598
Norway.....	June, 1914.....	Kr. 357	496	June, 1916.....	Kr. 423	587
Sweden.....	December, 1913.....	Kr. 718	997	December, 1917.....	Kr. 1,226	1,242
Switzerland.....	".....	Fr. 146	146	".....	Fr. 1,004	1,004
Total neutrals.....			14,358			18,551

* Foreign moneys have been reduced to Swiss francs on the basis of metallic parity.

† Consolidated debt.

‡ Floating debt.

† Approximately.

belligerent countries throughout the war, and the suspension of developmental investment.

This suspension has gone to the point of practically terminating all issues of securities in Great Britain and on the Continent, while in the United States such issues have been gradually sinking toward the zero point, except in so far as may have been necessary to provide the refunding or continuance of outstanding issues. Exactly what the loss or sacrifice incurred on this score may have been is still to be ascertained, current estimates of it varying very widely. If it be assumed that the current savings of the United States before the opening of the war were probably about \$7,000,000,000, of which a large part was represented by issues of new securities, and that practically all of these have been diverted to war operations, some idea is gained of the retardation of investment and the consequent loss resulting therefrom. The savings of Great Britain and France, while probably not as large as those of the United States, were very great, and both in the case of these countries and of Germany new investment has practically been suspended for some time past. How far this should be regarded as a net loss to be added to the losses represented by debt and taxation is already a subject of statistical controversy. It is at least clear that a loss of time has occurred which cannot be made up, such time representing the years lost to investment and economic development in consequence of the withdrawal of new savings. On the other hand a less measurable but still real element of sacrifice has been found in the loss of time and life on the part of productive workers, and in the disorganization of industrial and distributive systems, and the modification of foreign trade organization and routes.

THE BANKING SITUATION

As has been shown by the investigations of the Federal Reserve Board published in the *Federal Reserve Bulletin* for November, 1918, the fourth Liberty loan has been placed in a very large degree by the use of bank credit. Precisely how much such credit in the aggregate has been necessary in order to carry the loan is not yet certain but it has clearly been much greater than in the case of former Liberty loans. In addition to this large use of bank credit is to be reckoned the fact that the bonds of the fourth loan have been taken by the banks as collateral to secure notes running for long periods and made under agreements designed to insure to the borrower renewals at a rate of interest no higher than that borne by the bonds. These factors make not only for

a serious condition of inflation but also for the maintenance and continuance of the inflation much longer than would otherwise be probable. The return of peace therefore finds the banks of the country heavily burdened with war paper and at the same time in a position which renders it more than difficult to bring about a restoration of liquidity.

Coupled with this condition of affairs is the prospect, already referred to, of an early, and probably large, fifth Liberty loan. The indications are thus all in favor of a continuance of the inflated condition in which the banks of the country find themselves today, unless there shall be some general and resolute application of well-developed plans for the contraction of credit to its normal basis. Such plans could succeed only by determined continuance of the community in the process of saving and applying its saved funds to the reduction of its obligations incurred for the carrying of the bonds at the banks. The success thus far had in enforcing a policy of saving upon the community during the existence of the war, although marked, has never been sufficiently great to warrant a very confident expectation of material additions to this savings fund when once the stimulus afforded by the war has been removed. The country is thus thrown back once more upon banking guidance for the elimination of the inflation from which it now suffers. During the war such guidance could be offered only in the shape of advice, since the necessity of maintaining a low and stable rate of interest in favor of government obligations has entirely prevented the use of the ordinary means of credit control—the raising of the rates of discount and rediscount in such a way as to limit applications for loans. While it is true that during the latter months of the war a rigid policy of rationing fuel, transportation, and labor power, as well as many kinds of materials, prevented speculative developments in industry with the accompanying strain upon banking resources, such rationing had not been continued for a sufficient period and had probably not been of sufficient severity to produce a very widespread positive effect, although negatively it undoubtedly prevented excesses which might otherwise have occurred. With the return of peace and the lightening of the rationing policy in many respects, even this influence may be expected to decline in importance.

Thus the significance of the rate of discount as a means of control of credit extension will undoubtedly become more and more marked as time goes on. Immediate application of it is probably precluded because of the continued necessity of the government for funds during an after-war period of several months. Gradual return to a basis of solvency

and liquidity however is essential to the resumption of normal business collections and this can be accomplished only by the eventual elimination of long-term paper and inflated demand obligations from the portfolios of the banks, both member and Federal Reserve.

PRICES AND THE GOLD STANDARD

The inflation problem, as it is now recognized by banking authorities, is not local to the United States but exists practically throughout the world. British phases of it have been treated by the Parliamentary Commission on Foreign Exchange which filed its first interim report early during the month of November. This report recommended the adoption of immediate measures looking to the restoration of the gold standard in Great Britain. While the committee pointed out that it was unnecessary and clearly undesirable to attempt to return to an actual circulation of gold—paper, as experience has shown, serving the purpose better—it is fully recognized that a large supply of gold will practically be necessary for reserve purposes from and after the time when direct redemption of paper is actually restored.

The fact that the United States is today the greatest holder of gold in the world, and as a result of the war has accumulated much more than it would normally require to hold, as well as much more than would be its share on the basis of the world's banking obligations today, has suggested to many public men the thought that an immediate after-the-war problem will be provision for the redistribution of gold among the nations and consequently for a loss of gold to the United States in the process of reconstituting the gold supply of other nations. The immediate question of terminating the gold embargo, which has now been enforced for the past fifteen months, has thus been made acute. Under contracts entered into with various foreign countries we are today obligated to "release probably half a billion dollars in gold coin within a stated period after the closing of the war," and while this vague phrase permits a certain latitude in the selection of the exact date at which the shipments shall be permitted to begin, it is already the opinion of many that the sooner we are ready to release a reasonable amount of metal the more we shall contribute to the early restoration of normal banking conditions throughout the world at large.

The gold policy of the United States is however intimately associated with two immediate and serious questions—the establishment of a lower level of prices approximating that which formerly existed, and the elimination of inflation in the United States, which will permit a shrinkage

in the gold holdings of the country without any shock to what is called "confidence." Opposition to the reduction of prices is always a feature of after-war economic reorganization. One outgrowth of this feeling at the present time is seen in the international movement appearing both in England and the United States for the subsidizing of gold production. Of this movement an interesting phase has been witnessed during the month of November in the appointment of a governmental committee to report upon the necessities of gold producers and the methods properly to be followed in alleviating them. From the standpoint of inflation any loss of gold is always regarded as dangerous because of consequences which it produces in compelling the reduction of long-term loans not based upon immediate production. Both of these influences, already exhibiting themselves to some extent in business circles, naturally stand in the way of a restoration of our former policy of free importation and exportation of gold. The official suggestion is already heard from persons associated with so-called reconstruction work that something be done to check the tendency of prices downward toward the normal or older level in order that no shock to prosperity need be occasioned. On all these points, intimately connected as they are, governmental policy is still in a formative or transition stage.

BOOK REVIEWS AND NOTICES

History of Labor in the United States. By JOHN R. COMMONS and Associates. New York: Macmillan, 1918. Two volumes, pp. xxv+623; xx+620. \$6.50.

This first fairly complete and authoritative history of American labor movements is the result of the combined efforts of the best-known student of American labor history and his students from the time he went to the University of Wisconsin in 1904 to the date of publication. Through the efforts of Professor Ely a fund had been secured for the purpose of collecting materials relating to the American labor movement. *The Documentary History of American Industrial Society*, published in 1910, contains about one-tenth of the valuable documentary materials unearthed by the survey of the field of American labor literature. Over thirty investigators having access to the collected material have written monographs and articles which have been used in connection with the two volumes under consideration.

The *History* consists of an Introduction, written by Professor Commons, and six parts: Part I, "Colonial and Federal Beginnings (to 1827)," by David J. Saposs; Part II, "Citizenship (1827-1833)," by Helen L. Sumner; Part III, "Trade Unionism (1833-1839)," by Edward B. Mittleman; Part IV, "Humanitarianism (1840-1860)," by Henry E. Hoagland; Part V, "Nationalization (1860-1877)," by John B. Andrews; and Part VI, "Upheaval and Reorganization (since 1876)," by Selig Perlman.

These volumes constitute a history of American labor philosophies, movements, and conditions, but not, as might reasonably be expected, a history of various labor organizations or of the policies and structures of unions. The keynote or thesis is given in a sentence found in the Introduction. The labor history of the United States "is the story of how, in the course of three centuries, the wage earner, as a distinct class, has been gradually, even violently, separating himself from the farmer, the merchant, and the employer, and coming to feel that his standing and progress in society depend directly on wages and not directly on prices, rents, profits, or interest." The history of labor in the United States is distinguished from that of European countries (1) because of the presence

of free land down to a comparatively recent date; (2) because of the early acceptance of manhood suffrage; (3) because of the wide expanse of territory, which allowed extensive market areas; (4) because of Negro slavery in the South and the extraordinary influx of immigrants; and (5) because of the American constitutional and judicial systems which have forced labor to resort to trade-union action in regard to demands which in other countries have been granted by legislation (I, 4-10).

After presenting these conditioning circumstances, which are purely American, the authors proceed to develop the philosophy, aims, and methods of labor around a theory of marketing or bargaining. As the market area is enlarged and as newer and newer competitive fields appear, the difficulties confronting the wageworkers are transformed and their attitude toward labor organizations undergoes modifications. This theory is held with tenacity. It is the thesis outlined in Professor Commons' study of the evolution of the shoemaking industry.¹ Too much reliance is placed upon the phenomena connected with this one industry. And, let it not be forgotten, the most striking phenomenon in the history of unionism in the American shoemaking industry, the Knights of St. Crispin, was a protest "against the abuse of machinery"² rather than a consequence of changes in marketing conditions. The struggle in the early shoe industry, resulting from the enlargement of the market area, against inferior and unskilled workers and lower wages is not dissimilar to that which later occurred in the same industry or in the molding industry when the machine was introduced. A similar struggle is likely to occur in any industry when a new situation is developed, whether as the result of widening the market area, the introduction of new machinery, the influx of immigrants, or other causes.

The reviewer is of the opinion that no single-track explanation of the evolution of the labor movement is sufficient. Different labor organizations come into being as a consequence of very different combinations and balances of social forces.³ Indeed, other explanations have crept into the pages of the work under review. For example, on page 4 of Volume II, four reasons are presented for the nationalization of the labor movement, of which expansion of the market is one. The national organization of the cigar-makers is attributed (II, 69) to the growth of

¹ "American Shoemakers, 1648-1895," *Quarterly Journal of Economics*, XXIV (November, 1909), 39-84.

² Lescohier, *The Knights of St. Crispin*, p. 59; also, Commons, "American Shoemakers," *Quarterly Journal of Economics*, XXIV, 72-75.

³ See article in the *Scientific Monthly* (August, 1916), p. 157; also Hoxie, *Trade Unionism in the United States*.

large business on account of the internal-revenue tax imposed at the time of the Civil War.

If, however, a single-track explanation is held to be fitting and desirable, the reviewer may be permitted to call attention to the encroachments of the unskilled, the "green hand," the immigrant, or the foreigner upon the occupation of the skilled as the prime cause of labor organizations. As is pointed out by the authors, the first organizations of wage-workers were among the skilled men and not among the factory workers. As the market area widened, as machinery was introduced, as immigration became considerable, or as the development of "merchant-capitalists" made it more difficult for the journeyman to become an independent producer, organizations of wageworkers begin to appear. Discontent, revolutions, and labor unions first develop among those who are not at the bottom of the heap. "Really effective discontent must have a base of supplies." The skilled men, as well as others in more recent years, organized to protect themselves from threatened encroachments of one kind or another upon their standard of living; but the power to pound down wages or to prevent increases came with increased opportunity to introduce the green hand and lower-paid workers or the products of such workers produced elsewhere.

A few minor criticisms are offered with some hesitancy. Insufficient emphasis is placed upon the rôle played by workingmen in forcing the adoption of the free-school system. No attempt apparently is made adequately to account for the interesting phenomena of the "hot-air" period of the forties and early fifties—humanitarianism and the lack of "pure and simple" unionism. The former is not unrelated to the rise of manufacture and relative decline of commercial enterprise in the East and the consequent shift of the center of social gravity in the world of affairs.¹ And the latter is closely connected with the growth of the railway net, the influx of immigrants into the East, and the westward movement of the native-born. A careful analysis of the phenomena of this unique period should have been made. In the era since 1876 the reviewer ventures the opinion that too much space is devoted to the revolutionary movements among the workingmen in comparison with that given to the evolution of business unionism.

An extensive bibliography of the sources utilized and an excellent index are provided.

FRANK T. CARLTON

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¹ Carlton, "Humanitarianism, Past and Present," *International Journal of Ethics*, October, 1906.

Business Statistics. Edited by MELVIN T. COPELAND, Cambridge, Mass.: Harvard University Press, 1917. \$3.75.

This book is the third volume of the Harvard Business Studies. It was "prepared to bring together, in a form accessible for class use, scattered articles and selections upon the subject of business statistics." It is "designed primarily for the purpose of instruction in the course in Business Statistics in the Harvard Graduate School of Business Administration." It does "not pretend to cover the entire field of business statistics, but deals chiefly with statistics used in mercantile and manufacturing businesses."

The book is designed for advanced students who presumably have had training in statistical method. The function of a course in business statistics then would seem to be to give the business student a pretty definite conception of the scope of business statistics, to make him acquainted with the best types of original forms and records that business has developed, the quantitative units in use, methods of standardization of records and units, sources of data, and the essential problems of management. In addition, such a course should give thorough training in the practical application of sound statistical methods to the gathering of data, its analysis, and the interpretation and presentation of results in the simplest manner possible. How well does *Business Statistics* meet this program? It professes to be "only a beginning of the development of this subject," yet certain things may be expected of it.

In the first place there is no close definition of the field of business statistics. The editor gives his conception of the field of business statistics in the Preface, where business statistics are defined as "numerical statements of facts, exclusive of financial accounts, which are used in business administration." The reader is at the same time reminded that statistics "deal with aggregates as masses which are sufficiently large to reveal types of standards even if individual units show wide variation."

There are two classes of business statistics, (1) external, (2) internal. External statistics indicate market conditions and general tendencies in business. Internal statistics pertain to the processes and operation of the business unit itself. The needs of business administration are the controlling factors in the choice and analysis of the data available. There is no attempt made to distinguish between the field of accounting and the field of business statistics, nor between the field of economic statistics and the field of business statistics.

The book is divided into five chapters. The first two chapters, comprising about one-fourth of the book, are devoted to statistical

methods and statistical indexes of business conditions. With the exception of one or two the selections here are the best available. The making of questionnaires, the general types of statistical units, the use of index numbers, the theories of business cycles, and the sources of information of business statistics of the external type are well treated. The methods of tabulation are very inadequately treated and for methods of presenting data in graphical form the student is referred to special treatises. In view of the large use and possibilities of graphical presentation in actual business one cannot help feeling that at least a considerable effort should have been made to show the large place graphs should occupy.

The author reprints his own article on statistical indexes of business conditions from the *Quarterly Journal of Economics* (XXIX, 522-62). The recent work of Persons of Harvard University and Clark of the University of West Virginia shows the methods used by Copeland quite inadequate. Much further investigation along this line needs to be made before we shall have adequate indexes of business conditions.

The third, fourth, and fifth chapters deal with sales and advertising statistics, factory statistics, and statistics for the chief executive, respectively. How largely *Printer's Ink* and *System* are drawn upon is shown by the fact that of fifty-nine selections in the foregoing three chapters, twenty-eight are taken from these publications.

The selections of the last three chapters give an impression of the importance of the use of statistics in business, a description of many of the original forms and records used in business, and a statement of the essential problems of management. The selections used are the best available and are arranged in logical sequence. However, the actual forms, tables, and graphs for the most part have been omitted in the reprint of the selections. Here is a defect of no small account, for the collector and tabulator of business statistics cannot have too thorough acquaintance with the best forms and records that business has developed. Since the book is professedly a beginning, would it not have been better to try to cover fewer topics and present these more adequately?

There is scarcely anything in the way of defining concrete statistical units for business statistics. The discussion of statistical averages in the part on method finds little application in following chapters. Very little space is devoted to coupling statistical method to the problems presented. One feels that the chapters on method are practically unrelated to the chapters that follow. The fact that the book is a collection of essays on different phases of business makes a systematic, close-knit treatment almost impossible, no matter how great care the

editor may take in choosing his material. The editor's introductions to the different chapters are excellent.

Business Statistics is a pioneer in a rapidly developing field. With all its shortcomings, it is a timely volume in view of the present movement for efficiency emphasized by the war. To call attention to the field of business statistics, to present its main outlines, and to state many of its essential problems are indeed long steps forward. The requirements of administration of large business units and the increasing growth of public direction and control make business statistics more and more a necessity. One wonders whether the development of the science can meet the increasing practical demands on it in view of the industrial development that will surely take place after the coming of peace.

CHARLES A. DICE

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An Introduction to Statistical Methods. By HORACE SECRIST, PH.D.
New York: Macmillan, 1917. Pp. xxii+482.

Professor Secrist's book represents a determined, and on the whole a successful, effort to present in a clear and practical manner the essentials of statistical method, as opposed to its refinements. While many features of the book present what must appear to the scientific student as crudities and lacunae, it gives to those who make and use statistics in social and business problems the most that they really need, and in readily comprehensible form. The strong point of the treatment is its concrete and practical character, especially its handling of actual procedure and emphasis on the nature of sources of information, and its selection and clear presentation of fundamentals. There is little doubt that subtleties of method, especially the greater portion of the mathematical manipulation through which crude social data are often forced, are not only useless and repellent to the average mind but misleading and pernicious as well. Professor Secrist's presentation is well calculated to implant in the reader's mind a common-sense view of the subject, a critical attitude toward data, and a wholesome appreciation of the limitations of ostensibly precise statements in figures.

The plan of the work includes three introductory chapters on the meaning and application of statistics, sources and collection of data, and units of measurement. Then follows an illustrative chapter describing a model wage investigation, then three chapters on presentation, tabular, diagrammatic and graphical, a chapter on averages, two on index num-

bers and one each on dispersion and skewness, and correlation. Minor criticisms would be, first, occasional serious lack of clearness in the style, with unnecessary use of technical words and phrases. The almost complete elimination of symbols and formulae probably makes for harder rather than easier reading in fact. The unfamiliarity with and prejudice against symbolic notation on the part of large classes of readers must be taken into account, but should not be humored too far. The introductory discussion seems to be needlessly full on some points, yet on the whole to presuppose considerable familiarity with the actual use of statistics. There is a brief list of secondary (American) sources of statistical data (pp. 16-19) and a full description of American index numbers (chapter x), but one misses an objective account of the work of statistical agencies, and material relating to the problems they are supposed to solve or illuminate.

The usefulness of the work as a college textbook would be greatly increased by the addition of material for problems and exercises.

A deeper question, but one about which opinions naturally differ, is that of classification and arrangement of material. The basis chosen, as will be noted, is largely that of methods of presentation of results. It may be asked whether the character of the material itself or the problems to which it relates would not be more fundamental bases of classification. Adequate account is perhaps scarcely taken of the basic principle that description is for the purpose of understanding and ultimately for the purpose of control; in consequence, the guiding consideration throughout should be the discovery and exhibition of causal relations. In this connection more might be said on the selection of the facts to be gathered and presented and the analysis of data for bringing out the information they potentially contain.

F. H. KNIGHT

UNIVERSITY OF CHICAGO

Use of Factory Statistics in the Investigation of Industrial Fatigue. A Manual for Field Research. By PHILIP SARGANT FLORENCE, M.A., PH.D. (Studies in History, Economics, and Public Law, Vol. XXXI, No. 3.) New York: Columbia University, 1918. Pp. 153.

As the sub-title, "A Manual for Field Research," indicates, this monograph deals with methods rather than results. References to actual investigations (by the author and others) contain considerable up-to-date information, but this is illustrative merely and no effort is put forth to make it systematic or to

draw general conclusions. Indeed—and this will be missed by student readers—there is no attempt to estimate the real value of the sort of research discussed or the dependability or general significance of the results attainable. Intended simply as a practical guide for the concrete work of investigators in whom no high degree of education or training may be presupposed, the study is limited to elementary questions of procedure and interpretation. The analysis of the problem into its elements, however, is clear and thorough and the directions and precautions sound and practical. The outline of the presentation is elaborate and formal to the verge of the pedantic. Part V, on “The Demonstration of Conditions Predisposing to Fatigue,” meaning conditions affecting it either way, raises in especially acute form the deeper questions of statistical logic, as to uniformity of fundamental conditions, representative or typical character of situations, margin of error, etc., which are not broached by the author.



NEW BOOKS



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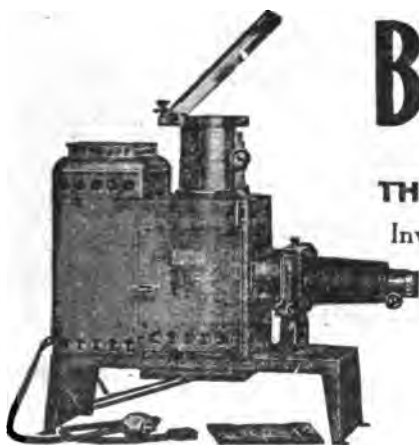
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